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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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# EDITORIAL

## THE EFFECTS OF PEACE.

The joy of the Allied Peoples over the signing of the peace treaty has doubtless been somewhat dimmed by the many delays and lengthy discussions that have taken place since the conference has been working on this important document. The business world has had plenty of opportunity to consider the possible and probable effects of the treaty and the lack of any marked reaction one way or the other on the New York stock exchange seems to indicate that the business world had pretty well made up its mind some time ago.

The signing of the treaty simply puts the seal of completion on the enormous task that the representatives of the warring nations have had in hand for the past six months. The completion of this work just before Canada's Dominion Day suggests a new significance to Canadians in the sacrifice they have made with the result of insuring the future of the Dominion against such designs as the German people would certainly have executed had they not been stopped on the Marne.

The first thought that comes into many minds is, of course, to wonder what effect the actual assurance of peace will have on one's particular business. There are many angles from which to view this matter. As far as domestic conditions are concerned the signing of the treaty brings our attention once more to the furnishing of the home market with supplies that have been side-tracked for nearly five years or whose production has given way to the manufacture of munitions. The rearrangement of manufacturing conditions involves also the re-establishment of the returning military forces in civil occupations. Happily this work is going forward rapidly and both the returning soldier and the ex-munition maker is for the most part re-established in peaceable occupations. The agricultural season will absorb many more than are now employed in it if they have an inclination to engage in this line of work. The domestic and foreign demand for much of our manufactured product calls for continued effort. The production of such commodities and additional equipment for the production of some of them means still greater opportunities for employment in the manufacture of goods and machinery. The reconstruction of Europe and the feeding of many people whose agriculture has been sadly deranged calls for enormous quantities of exports so that there is a very urgent demand on our sources of supply and a particularly heavy burden is laid on shipping facilities.

It seems quite likely that the portion of the treaty

which will have the most far-reaching effect on the world's commercial future is the part which provides for a fairer treatment of the laboring man than he has been accorded in the past. International wage standards will do more for establishing fair and uniform prices than any tariff could possibly do and will tend to put the costs of production on a more uniform basis. With Canada's enormous grain fields and with the capacity for producing more than enough meat for home consumption it would seem that efforts to maintain maximum food production should be the basis for putting our workmen in a position to compete on most favorable terms with those of any other country. This, of course, will also necessitate maximum production per individual in manufactured goods as well and continual attention to the quality of the product. It is certainly a hopeful sign when we can look forward to the end of the exploitation of labor for excessive profits in one country and the excuse for high tariffs and exorbitant prices in another.

The reduction of armaments, both as regards material and men will not only relieve populations from taxation that serves no useful purpose but will also release many producers from being a public burden and permit them to be helpful producers, thus reducing still more the individual share of maintaining former military establishments.

After December 25th, June 28th is certainly THE DAY in the history of this good old world.

## A PECULIAR SITUATION.

The signing of the peace treaty brings about a peculiar situation in the paper industry of Canada. This event automatically ends the life of the War Measures Act, under which the Order-in-Council was issued which established the office of the paper controller and resulted in the present price of \$69 per ton for newsprint sold by Canadian mills to Canadian consumers. The war situation also resulted in the establishment of the price of \$75 per ton for newsprint in the United States as the figure recognized by the Government and agreed to by producers and consumers. Now that the bans are lifted we find the strange condition of affairs where a paper mill in Canada may be selling paper on one side of an imaginary line for \$69 a ton, when it might sell the very same product on the other side of the line for \$75. This, of course, is perfectly satisfactory to the user of the paper on the Canadian side of the line, but the consumer on the American side no doubt continues

to look with envy on his Canadian confrere. If the Canadian producer raises his price it is quite easy to predict the effect on the Canadian publisher, and if he does not raise his price he is quite likely to be labeled either a philanthropist or an idiot. There may be some who will think that it is sufficiently sound business sense to let well enough alone and allow present prices to run on for a time unless it is quite certain that the figure does not provide a sufficient return to insure adequate interest on investment and satisfactory wages to workmen. The situation is as delicate as it is peculiar and a solution of it that will make for harmony and mutual understanding between the producer and consumer of newsprint will be a great benefit to the future of our industry. We are just on the turning point of relations between the manufacturer of newsprint and the publisher of the newspaper. These relations have been sadly strained during the past two years and at one time there was even the beginning of a break. Fortunately that time is passed and now it is to be sincerely hoped that neither side will attempt to take an unfair advantage of the other but that both, realizing that the life of each depends on the profitable existence of the other, will so rule their actions as to bring about the establishment of an understanding and good feeling that is absolutely necessary to the continued success of both.

#### THE EIGHT HOUR DAY IN FRANCE.

On the 23rd of April a law was enacted in France for the establishment in manufacturing and other business of a working day of not more than eight hours for workers of either sex and all ages. Not only is the work day limited to eight hours, but there is also a limit of 48 hours per week or an equivalent. The law further provides that there shall be no reduction in wages on account of the reduction in hours.

"La Papeterie" predicts a very considerable derangement in the organization of the paper mills in France, and in other industries which require continuous operation. At the present time the mills are operated on two shifts of twelve hours each and it is stated a change of hours will be difficult both because of the economic results due to an increase of 50 per cent. in the element of wages, but also on account of the difficulty in obtaining sufficient skilled labor for the operation of the mills.

After mentioning the division of the day into three eight hour periods and referring to the inconvenience of changing shifts at night, particularly in winter, our contemporary outlines another scheme. There would be three shifts each working 12 hours. The first would begin Monday morning at 6 and work till 6 p.m., when the second would begin and continue for 12 hours, being relieved by the 3rd, which would work until six on Tuesday evening. Then the first would take up the work and the cycle would be repeated. In this way each shift would work a total of 48 hours,

half of which would be in the day time and half at night. A possible difficulty here is pointed out in the opportunity for workmen to do other work in their free time instead of resting, so that the object of the law would be partly defeated, in so far as it is an attempt to maintain labor at the highest point of efficiency by substituting a short period of concentrated effort rather than an extended period of lower efficiency. There is also some question raised as to the effect of the law in making it more difficult for France to compete with foreign paper makers.

France seems to be in difficulties, also in the matter of transportation facilities. It was stated in the Chamber of Deputies on May 9th that there were 1,100 empty cars at Grenoble and that shipments were suspended, while trains of empty cars went in all directions. The Minister of Transportation said the number of loaded cars handled daily was 31,000 in February, and 37,000 the first of May, as compared with 60,000 in July, 1914. Transport by water is equally disrupted and quite insufficient.

The mountains of pulp at Ronen have for the most part been shipped out by rail or water, but in the long months of storage, much has been lost, either actually or in value because of damage.

#### WELCOME LA PAPERIE.

"La Papeterie," which is now 41 years old, went to war in 1914 and consequently has not been seen in our offices and libraries for nearly five years. Lhomme & Argy, publishers of this excellent journal, have resumed publication after an interruption of 58 months. We read that the war has dealt very severely with them since all of their plates, stocks of paper, etc., that were at Chauny were stolen by the Germans and the establishment sacked.

We congratulate our contemporary for its part in the war and for its ability to recover so rapidly and we wish our friends every success in the continuance of their publication.

An article on the Paper Industry in the devastated parts of France and Belgium contains an estimate of damage to paper, board and printing establishments amounting to 500,000,000 francs for material (equipment), 50,000,000 for raw material and supplies and 150,000,000 loss of production (six years), a total of 700,000,000 francs. The damage is given in considerable detail in the article, and a perusal of it does not foster any thought that the peace terms have been too severe on the Germans.

A Western educator proposes making the study of French compulsory, in high schools, even if it is necessary to reduce Latin to the position of an optional course. He should apply his idea to elementary schools and make the study of French compulsory for every child in Canada. The course is equally desirable in French speaking communities.



# Decay in Wooden Mill Roofs

By R. J. BLAIR, Pathologist, Forest Product Laboratories of Canada, Montreal.

Mr. Blair spoke to the editor some time ago of his intention to prepare an article along the lines of the one which follows, and an arrangement was made for the publication of this in both the CANADIAN TEXTILE JOURNAL and the PULP & PAPER MAGAZINE OF CANADA. It has already appeared in the former. While Mr. Blair's work and investigation has been particularly in regard to the roofs in the textile establishments he has paid some attention as well to similar conditions in pulp and paper mills. In many cases the conditions are almost exactly parallel in the two industries, although for different reasons. In the textile industry a certain amount of humidity is necessary to get the best results from certain operations. In the Pulp and Paper industry large quantities of water are used in the process, and in the primary manufacturing operations large amounts of moisture are evaporated from the paper. This moist air, contrary to popular conception, is lighter than dry air, and consequently collects at the highest parts of the room or building. As in many cases the roof forms the ceiling of the room in which the paper machines are located, and particularly in Canada, where the average temperature either of the air or by reason of accumulated snow, produces a temperature in the region of the roof below the dew-point, it is only reasonable to expect a large condensation of moisture on the cold surface. The very serious effect of such condensation because of the fungus growth which it encourages, is well brought out by the author of this article, and he has also pointed out the natural remedy and explained how and why improvement in conditions is to be obtained.

In mentioning the subject of this article to a number of paper mill men the editor was surprised to note the extent to which this very trouble is met with in our industry. In spite of increasing use of concrete for roofing and flooring, an industry which is so closely associated with the forest and the production of lumber will continue to use a large amount of timber in roof construction and the importance of Mr. Blair's observations and suggestions will find many applications.

## THE LOSS IS PREVENTABLE.

In mill buildings of a type where the air is held at a high relative humidity, the question of decay of planks in the roofs has assumed considerable importance. During the past few years an acute stage of the problem has been reached in the cotton mills throughout New England, and it seems that a thoroughly sound plank roof of a weave shed which has seen eight years service is a rare exception. Of 24 such roofs recently examined by the writer, only two exceptions were found, and these were very small roofs forming less than one per cent of the total area of more than 47 acres examined.

A combination of several conditions is responsible for this unfortunate state of affairs. The trouble from decay has become prevalent since the sawtooth roof has been generally adopted for weaving sheds, but it is not the result of this construction. Under the same mill

conditions decay is just as liable to take place in a monitor or flat roof. Some of the fault is due to an inferior grade of lumber which has been on the market during the past fifteen years, while the changed conditions of manufacture, resulting in the maintenance of a higher relative humidity in the weave shed, have also played a part.

In some of the mills it has been found necessary to replace all of the roof-planks after no more than 8 or 9 years' service. In others only parts such as flat places, or the valleys at the bases of the sawteeth, have needed renewal. In one of the mills visited, planks, which had been on a flat part only four years, were being replaced. When a renewal of decayed planks is made and no precautions are taken to prevent a recurrence of the trouble, the chances are that the new roof will rot out in less time than the old one on account of infection remaining in the rafters or beams.

This article is an attempt to show that this loss may be materially reduced, or avoided, if certain precautions are taken when building the roof and in caring for it afterwards.

### *What Makes Wood Decay?*

Wood is a complex organic substance closely related chemically to the carbo-hydrates: cellulose, starch and sugar. On this account it is spoiled or rotted in much the same way as the latter materials where spoilage is brought about by the action of lowly organized living plants such as bacteria, yeasts or moulds. As long as these substances are kept really dry they remain in good condition, but, with certain amounts of moisture in them, deterioration at once sets in. In just the same way there are numerous kinds of wood-destroying fungi which can bring about the decay of wood. Fortunately only a few of them are able to attack the planks in a paper mill roof. These fungi are plants which are organized in much the same way as yeasts or moulds. They are able to take the complex organic compounds of which wood is formed and break them down into the simpler substances, thus bringing about its destruction.

The active part of a fungus plant consists of a great number of fine, branching filaments which are smaller than single cotton fibres.

These filaments penetrate the wood in all directions, pierce its fibres and dissolve away parts of them. In this way the wood is weakened and what remains is changed in such a way that when exposed to the air it becomes brittle, cracking up into small blocks. A plank which has reached this stage is of little use in a roof.

### *Moisture Permits Decay.*

Before one of these fungus plants can begin to grow within a roof-plank, a certain amount of water must be present in the wood. A fungus plant is no more able to grow without moisture than a potato plant is able to grow in dust-dry soil which remains in that condition. In these roofs the moisture necessary to decay the wood is absorbed from the air of the room, and as soon as the amount required by the fungus has been taken up, the planks are certain to begin to rot. Wood is such a substance that it absorbs different amounts of moisture according to the varying degrees

and humidity, if the wood is exposed. The exact humidity of the air is not exactly known, but it lies at some point above 70 per cent. This figure varies for the different fungi, as well as for the various kinds and grades of timber which may be used, but in all cases it is so closely defined that a difference of one or two degrees in temperature may prove the deciding factor as to whether a fungus will grow or not. Any cooling of the air about the roof should be avoided, for, when the air is cooled, the relative humidity rises and the wood can then take more moisture. The winter season is thus an important condition in regard to the growth of fungi in roofs, but its influence can be overcome to a great extent by the correct arrangement of the heating system as will be explained later.

#### Dangerous Fungi.

It seems that there are four principal varieties of fungi which are responsible for the decay of roofs. These are *Lentodium tigrinum*, *Lenzites traborum*, *Fomes officinalis* and *Poria rantha*. One is able to distinguish the variety by an examination of the fruiting-body. When the fungus plant has reached a certain stage of maturity a fruiting-body is formed. This is a growth which corresponds to the flower and fruit of the green plants. These fruiting-bodies, often known as toad-stools, are found near cracks in the planks, or may even appear between different planks.

The *Lentodium* plants (Fig. 1) are pale yellowish in

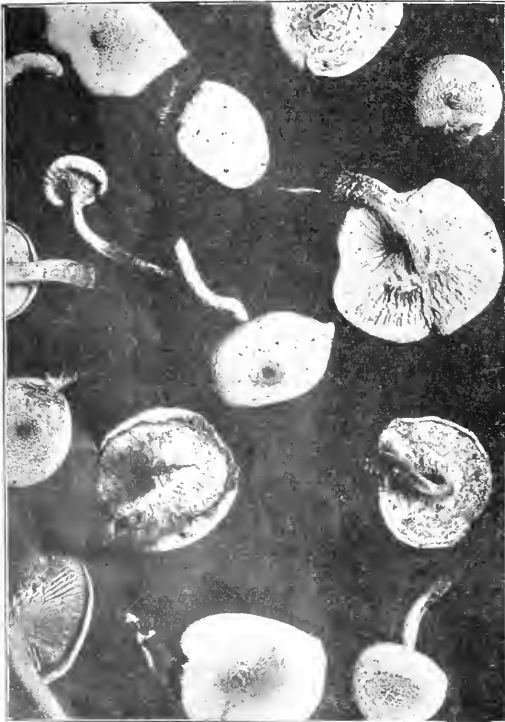


Fig. 1. Fruiting-bodies of *Lentodium tigrinum* found growing from cracks between roof-planks at valley of a sawtooth roof. (1/2 actual size.)

color and umbrella shaped, consisting of a central stem and a circular cap at the top. A series of plates called gills are found on the under side radiating from the central stem to the edges of the cap as in the edible mushroom. The *Lenzites* plants (Fig. 2) are without any stem. They are of varying shades of brown and occur in the form of shelves, discs or extended flat growths closely attached to the planks. The under side is often found to be divided into narrow folds much like the gills in *Lentodium*, except that they are less regular. The fruiting-body of the *Poria* (Fig. 3) is a flat growth, white in color throughout. A careful examination of the underside shows the presence of numerous small round pores. The fruiting-bodies of the *Fomes* (Fig. 4) are irregular lumps with pore areas here and there on the surface.

#### Roofs Which Decay.

When it was found that a roof made of a single thickness of planks rotted in a short time, it was thought it would be more durable if made with an air space for heat-insulating purposes. Double roofs were therefore devised with air spaces either underneath the planks or outside of them, the extra layer being as a rule 7/8 or 1 inch tongued-and-grooved sheathing. Experience has shown that the sort of an air space which has been used was of no value in a roof for the purpose intended. In most cases it was a positive disadvantage, because moisture entered this space and encouraged the growth of fungi. The planks have been joined together in various ways,—with splines, with dowel pins or simply tongued-and-grooved. The result has been the same in every case; there was decay sooner or later. Different directions in which the planks were laid have been tried, but it did not matter whether they ran up and down the slant or parallel with it. Decay took place in any case.

Southern Pine has been used in a great many of these roofs, but when it was found that it rotted some thought that perhaps the fault lay with the pine, so they used spruce instead. However, it has been found that a spruce roof is no less liable to decay than one of pine. It needs to be borne in mind, however, that in any one species of wood there are different grades, and that under usual paper mill conditions any grade is apt to give out in time. Excellent all-heart three-inch South Pine roofs have lasted from fifteen to twenty years in Massachusetts with relative humidities maintained at from 70 to 75 per cent, while light sappy pine is hardly worth putting on at all, unless given a preservative treatment.

Good spruce lasts much longer than the yellow pine usually obtainable.

#### Explanation of the Trouble.

The decay in a roof where moisture condenses in cold weather is easily explained. The colder the weather the more the moisture is condensed. The cold roof planks act in the same way as any cold object placed in a warm moist atmosphere; a thin layer of air next to it is chilled below the dew-point so that some of the moisture is condensed on its surface. When water forms on the under-surface of a roof some of it is taken up by the wood while the rest drains away and finally drips to the floor. The moist wood is then an ideal place for fungus growth. Such a condition is bad from two points of view. Decay is certain to take place in the wood, and moisture dropping from the roof may injure any goods upon which it falls.

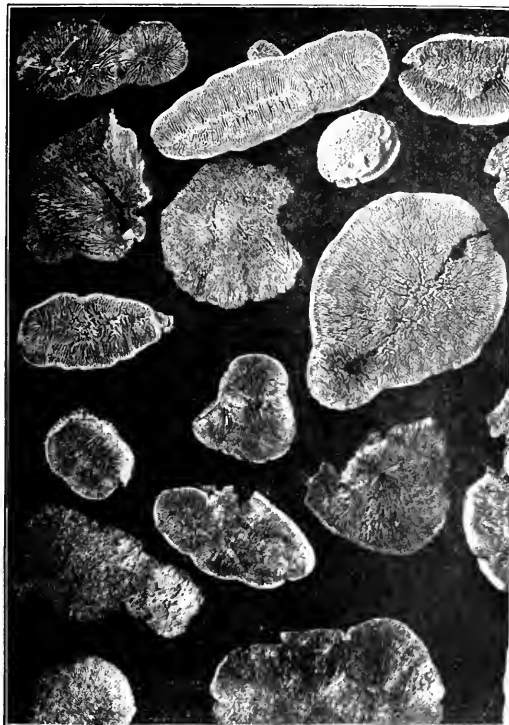


Fig. 2.—Fruiting-bodies of *Leucites trabicum* from roof-planks in a sawtooth roof. ( $\frac{1}{2}$  actual size.)

It is not necessary, however, for moisture to be condensed on the roof-planks in order for them to decay. Even when the layer of air next the roof is at a temperature above its dew-point, sufficient moisture may be taken in by the wood when near the dew-point for fungus to develop. In such cases the decay is found to be at the upper surface where the wood is next the cold tarred paper, or where it lies on a beam and remains cold. The wood is porous and the interior spaces are filled with moist air. At some depth in the plank this enclosed air is therefore chilled to its dew-point. Identical conditions are then set up as in the roof where moisture is condensed on the under side, except that the action is confined to a certain layer of the plank. Decay will be found only in that inner layer of the wood, because the warm side of the plank is a little too dry to rot.

#### Requirements for a Good Roof.

To give satisfaction it is necessary that a paper mill roof fulfil two conditions. It must not decay and moisture must not condense on its under side. A roof may be rendered immune to decay by giving the planks a preservative treatment. A preservative is a poison with which the wood is impregnated, thus rendering fungus-growth impossible. However, we have seen that very often the inner side of the planks does not decay and any preservative used in this layer is an outlay which yields no return. There is also the objection that creosote oil, the preservative most often used, leaves the

wood in an unsatisfactory condition for painting. As the lumber market is to-day, it is almost impossible for the mills to buy the treated timber for roofs, and if they desire to use preserved planks they are forced to treat the timber themselves.

#### A Safe Roof.

A roof which will not decay and will also avoid condensation troubles is made of two thicknesses of plank, separated by three layers of mopped tarred paper. The regular tar and gravel finish is applied over all.

The paper separating the layers of plank prevents the moist air of the room from reaching the cold upper layer of the roof so that no condensation takes place. Select high-grade material is used for the inner layer. This is the warm side of the roof and is safe from decay. The upper thickness of plank is used for heat-insulating purposes only, so that strength is of no importance and planks of a very inferior quality may be chosen. This layer comes within the cold part of the roof and to prevent its decay it should be given a preservative treatment. As the mill owner probably has to do the preserving himself he gets planks containing as much sapwood as possible because sapwood is more easily penetrated by the preservative. For a preservative, creosote oil is most commonly used. A tank is fitted up so that the oil in it may be heated to boiling. The planks are then placed in the tank, immersed in the oil and are boiled in it for a day. After the boiling the planks are allowed to cool in the oil. Green and unseasoned wood should be allowed to air-season thoroughly before treating since the drier the wood the better the penetration secured.

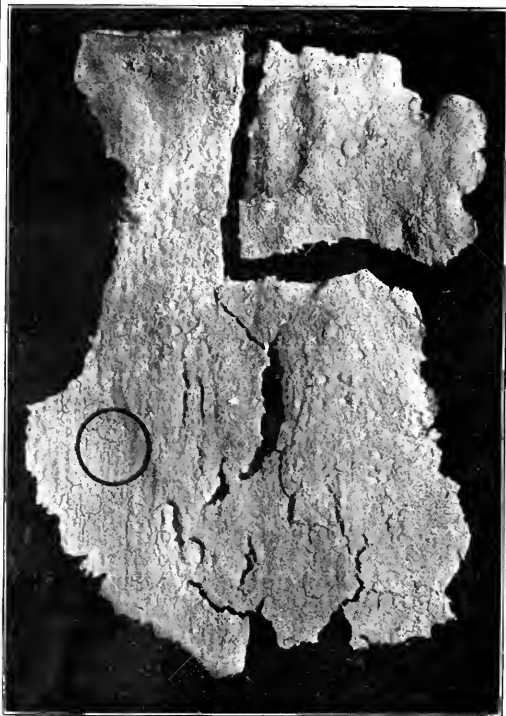


Fig. 3.—Eucrusting fruiting-body of *Poria xantha* found on under-side of plank in flat roof in a weaveshed. ( $\frac{1}{2}$  actual size.)

#### A Safer Roof Conserves Heat.

The double plank roof has the additional advantage over the thinner roof in that the heat loss is not so great and less heating is required to maintain the interior at the proper temperature.

Various insulating materials, such as hair-felt or corkboard, are sometimes used beneath the tarred paper of a roof. Their insulating power may be destroyed entirely if moisture is allowed to reach them. To prevent this, at least three layers of mopped tarred paper should be laid before adding the insulating covering. This will eliminate all possibility of the felt or cork-board becoming wet and it will thereby retain its insulating properties.

The extra plank layer for insulation has the advantage over these other insulators in that it gives a firmer upper surface to the roof. For the amount of insulation obtained the cost is also less.

#### Keep the Roof Planks Warm.

The arrangement of the heating system in the paper mill appears to have a much more important bearing upon the subject of decay in the roof than has hitherto been realized. In a roof which is well heated in some places and allowed to remain cold in others, the cold parts rot out in a short time. The warm roof has a much longer life than the roof without such protection. To get the most efficient heating effect on the roof with any given supply of heat it is necessary to arrange the system in a different way from that which is usual. In

many mills the banks of heating pipes have been placed directly beneath the windows in the sawtooth roofs. This is a bad practice, because a large amount of heat leaving the pipes is immediately lost through the glass.

Another plan, better because it secures a more uniform distribution of the heat, is to place more than half of the heating pipes beneath the valley in the sawtooth. With this arrangement the heated air warms the lower part of the roof before reaching the window at the peak. The value of a more even distribution of heat was shown very clearly in one of the roofs examined. A single sawtooth in a weave room was still in good condition after fifteen years' service. The other sawteeth had all been renewed. The good sawtooth had as many heating pipes under the low part of the valley as it had beneath the windows, while all of the other sawteeth were heated only under the windows. Beneath a flat part along one side of the same weaved shed a bank of heating pipes had been placed for only half its length. Where the roof was heated it was in good condition, but where it had not been heated the planks had fallen in.

Flat places at the end of the sawteeth or along the sides of a mill are to be avoided as much as possible. These strips are often narrow and unheated or have insufficient heating pipes. Invariably they decay more rapidly than the slanting part of the roof. In two mills where this had happened matters have been improved by extending the sawteeth to the side of the mill.

#### Recommendations for Roofs.

1. During cold weather a roof needs to be kept warm; if it gets cold there is danger of rotting taking place.
2. The heating system should be so arranged that the heat is evenly distributed to all parts of the roof. In a sawtooth roof the greater part of the heating is best placed under the lower part of the slant.
3. Flat parts of roofs decay more quickly than slanted parts, because snow lodges there and keeps them cold. Very often the flats have less heating applied than the slants, whereas they actually require more.
4. Less heating will be required to keep the roof warm if it is made thicker at the start. A safe roof consists of two thicknesses of plank separated by mopped, tarred paper, the upper plank being treated with a preservative.
5. Roof ventilators in a weaved shed are best omitted altogether. Decay usually starts in the planks around them before other parts of the roof are attacked.
6. If drain pipes from the roof have to pass through a room where the air is very moist they should be insulated as if they were steam pipes. Otherwise, they cool an area of wood in the roof and cause it to rot.

An interesting paper on Forest Engineering was read at a recent meeting of the Sault Ste. Marie branch of the Engineering Institute of Canada, by W. F. V. Atkinson, forester for the Spanish River Pulp and Paper Co. He spoke of the valuable work of the Forest Products Laboratories in extending the uses of woods and explained how the forester has many duties that affect both his principals and the public, as in the matters of stream flow and the perpetuation of the forest.



Fig. 4.—White, irregular, lump-like fruiting-bodies of *Fomes officinalis* found growing in beams in a weaved roof. ( $\frac{1}{2}$  actual size.)

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for the extensive and very valuable document, which was adopted, and it was decided that the committee should be continued in office.

It was further decided that the Association members pledge themselves to use the report for the purpose of comparison with their own estimate during the year 1919, and to send to the Secretary of the Association any suggestions for the revision of the report; and also that the Cost Committee be empowered to use their judgment as to the distribution of the report among paper box manufacturers, who are not members of the Association. It was further resolved that the Trade Customs as proposed by the Cost Committee be recommended to members for adoption.

Another resolution carried was that the estimating forms for solid boxes and folding boxes as proposed by the Cost Committee be adopted and supplies thereof be sent by the Secretary to the members. For their able and untiring efforts in preparing the report the members of the Cost Committee were cordially thanked.

William C. Jephcott, late of the Dominion Paper Box Co., Limited, Toronto, enjoys the distinction of being the first gentleman elected to Honorary Membership in the Association, and a letter was read from him expressing his thanks for the honor. A letter was also read from H. A. Dickie, Secretary of the Folding Box Manufacturers' Association of the United States expressing his thanks for an invitation to attend the convention and regretting his inability to be present.

#### Permanent Tariff Board Favored.

One of the most important resolutions passed at the convention was the following in regard to the Canadian Customs Tariff.

Whereas demands are made at frequent intervals by various sections of the Canadian people for radical changes in the Canadian Customs Tariff, and

Whereas such demands prevent the determination of the settled policy that is necessary for the development of industry and trades, and cause depression in business, unemployment and imperil invested capital, and

Whereas it is of vital importance that all industry should have reasonable assurance of stable conditions which will not be adversely and suddenly disturbed by unexpected and imperfectly considered tariff legislation,

Therefore be it resolved that the Canadian Paper Box Manufacturers' Association in Annual Meeting assembled at Montreal, on June 24th, 1919, respectfully urge the Dominion Government to appoint a permanent tariff board, acting in an advisory capacity to the Government, which will make a scientific study of the Canadian Customs Tariff, and the tariffs of other countries with whose products Canadian producers are forced to compete, familiarize itself with costs of production at home and abroad, investigate the nature and probably national effect of all requests for tariff changes, and endeavor to frame a tariff that will serve the best interest of Canada, and thus assure the harmonious and all-round development of the country.

#### Those Who Were in Attendance.

The following members of the Association were in attendance at the fourth annual convention:—

W. P. Bennett, representing Rudd Paper Box Co., Ltd., Toronto.

Art. Harries—Canada Paper Box Co., Ltd., Montreal.

P. F. Rowell—J. C. Wilson, Limited, Montreal.  
S. J. Frame—Sec. Treas., Can. Paper Box Makers Association, Toronto.

J. A. Moisan—The Standard Paper Box Co., Ltd., Montreal.

John H. Forsman—C. H. Forsman Co., N.Y.

J. H. Lefevre—The King Paper Box Co., Ltd.

J. H. Gedhill—National Gum & Mfg. Co., N.Y.

Duncan H. McDermid—Somerville Paper Box Co., London.

E. G. Cook—Samuel R. Parry, Rochester.

Marshall Hayward—"The Shears," Lachine, Ind.  
N. G. Gzowski—Canada Boxboard Co., Ltd., Montreal.

Thomas J. Allen—Paper Sales, Ltd., Toronto.

Thos. H. Lacey—London, Paper Box Co., London.  
Jas. Logie—Canada Boxboard Co., Toronto.

J. R. Saugster—Page Printing & Binding Co., Sherbrooke.

Geo. Turnbull—Galt Paper Box Co.,

C. T. Reid—Charles Reid & Co., Hamilton.

W. J. Hood—Gummed Papers, Ltd., Brampton.

B. Sproule—Collett-Sproule, Toronto.

F. B. Smith—A. D. Shoup Co., Ltd., Toronto.

W. T. Miller—The Miller Bros. Co., Ltd.

John T. Robinson—John T. Robinson Co., Hyde Park, Mass.

J. L. Constantineau—The King Paper Box Co., Ltd.

C. Winter Brown—The D. F. Brown Paper Box Co., St. John.

W. J. Hampel—Hampel Paper Box Co., Brantford, Ont.

C. B. Pearsall—M. D. Knowlton Co., Rochester.

A. M. Claffee—M. D. Knowlton Co., Boston.

R. Tresidder—National Paper Goods Co., Hamilton.

T. H. Sear—Toronto Type Foundry Co., Montreal.

David Brown—The J. L. Morrison Co., Toronto.

D. F. Robertson—Northumberland Paper and Electric Co.,

W. E. Frankish—The Empire Paper Box Co., Ltd.

C. De Wolf Reid—Montreal.

H. M. Niven—Rudd Paper Box Co., Ltd., Toronto.

Alfred Jephcott—Dominion Paper Box Co., Ltd., Toronto.

J. S. Czowski—Canada Boxboard Co., Ltd., Montreal.

James T. Venables—Montreal.

R. H. Bryon—Brompton Pulp & Paper Co., Ltd.

J. N. Hutchison—Dominion Envelope & Carton Co., Toronto.

#### FOREIGN LANGUAGE BULLETINS.

Members occasionally suggest that the National Safety Council print bulletins in foreign languages to reach the non-English-speaking worker. The large number of dialects that would have to be included, to give equal service to all the membership, makes this impracticable. One member has solved this problem in the following simple manner:

"I have had the National Safety Council bulletins translated into Polish, as we have a number of Polish employees in our plant," he writes. "I get one of the men in the plant to give me a translation of it. Then I have the translation copied on the typewriter. I put the diacritical marks on with a pen and paste the translation at the bottom of the bulletin. It has produced good results with us."

Of course, the most satisfactory solution is to induce all employees to learn English.

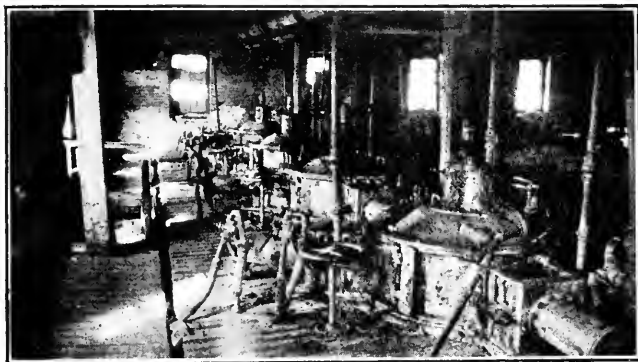
## An Early Canadian Groundwood Mill

Through the courtesy of B. C. Root, of Hydraulic Machinery Co., Frank Powell, of the News Pulp & Paper Co., and John Ford, of Portneuf, we are able to present a few items that will be of considerable historic interest to the pulp and paper makers of Canada. This has to do with the old groundwood mill at St. Raymond, Que., which is now in the possession of the News Pulp & Paper Co., although it is not at the present time in use.

The story goes back to 1878 or thereabouts, when the first hydraulic grinder was built by Moise Briere at Portneuf. According to Mr. Ford, Louis DuPont was using a grinder in which the pressure was exert-

chine will weigh about 7,000 lbs. If you wish to have it much lighter we can make it like the one at Portneuf at a lower price."

The drawing which accompanied this tender is the one shown on this page, and bears the date 1887. According to Mr. Ford's notebook work was begun on July 18th, 1888, and the mill started the following May. The grinders were not of the model shown because the firm that undertook to build this type were unable to carry out their contract, and it was necessary for Mr. Ford to get grinders of the Du Pont model from Carrier & Laine, of Levis, who had acquired the rights of manufacture. A picture of this old installation is shown in the photograph. The stones were 48" in diameter and about 18" across the face. There were three pockets and a pressure



Old Pulp Mill at St. Raymond.

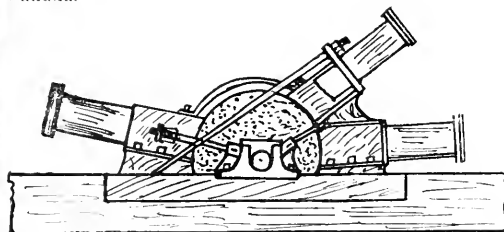
ed by means of a pulley and weight, but this did not give satisfaction, and Mr. Ford's father, Joseph Ford, conceived the idea of using hydraulic pressure. Du Pont and Briere tried it at once and managed to grind wood after a fashion. In 1880 John Ford built the first hydraulic grinder that was a success. It was a two pocket grinder like that shown in the illustration, which is taken from an old drawing. This was started up in a mill at Glenford on the St. Anne River, below St. Raymond, in October, 1880. Attached to the drawing is an estimate of the cost, which, translated, reads as follows: "A machine as described with three boxes and one stone 48" x 16", the price will be \$700.00 on board boat or the ears at Quebec. With two boxes only \$545.00. The ma-

of about 40 lbs. per square inch on the wood was used. The power for each grinder was about 200 H.P., and the output about two tons per day for each stone. The stones ran on vertical shafts, and the wood was dropped vertically into the pockets. The mill was started with three grinders, which were installed by John Ford in what was an old grist mill on the Quebec and Lake St. John Rly., for Thomas L. Jackson. Thomas Logan, of Sherbrooke, an uncle of Mr. Jackson, financed the transaction. Mr. Ford has in his possession the contract under which he equipped and operated the mill and has also a certificate of fulfilment given him by Mr. Jackson.

It seems probable that the old Du Pont mill referred to was the first groundwood mill in Canada. It is fortunate that Mr. Ford kept accurate notes of his work, and it would be a great thing for the industry if we could have a few other personal recollections of this kind regarding the early mills of Canada.



Mill at Portneuf, where Du Pont made his first groundwood by hydraulic grinder.



The First Grinder Using Hydraulic Pressure.

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## Woodlands Section Saw Hydroplane Demonstration

The summer meeting of the Woodlands Section of the Canadian Pulp and Paper Association which took place at the provincial nursery at Berthier and Grand'Mere last week was marked by an incident unique in the history of such gatherings in Canada. For the first time a convention was privileged to witness a demonstration of the handling of a hydroplane in action, and all who saw it were impressed with its possibilities as an additional link in the means of protecting our forests against fire.

The summer meeting was unique in another way, that is, it was distinctly an open air demonstration meeting. Members of the Woodlands Section from Western, Northern and Eastern Ontario, from all parts of Quebec as well as from New Brunswick, met at the provincial nurseries at Berthier in time for luncheon last Wednesday, June 25th. The Dept. of Lands and Forests, who were the hosts of the Section, furnished an elaborate and abundant luncheon of delicious things, which were heartily enjoyed by the hungry visitors. A fine bright day added to the pleasure of inspecting the nurseries. These were established in 1908 by the Hon. Mr. Turgeon, who was then Minister of Lands & Forests. From a very modest beginning, consisting in the fall of the first year of some 200,000 plants of white pine, Scotch pine, Norway spruce, European larch, etc., the nursery has grown until now there are more than 4,000,000 trees growing, and it is soon expected that it will be possible to ship from two to three million plants a year. Shipments of continually growing size have been made since the nursery started, and as a result of its work trees have been planted by individuals, colleges and municipalities, besides quite large attempts at reforestation by the department and by timber using concerns.

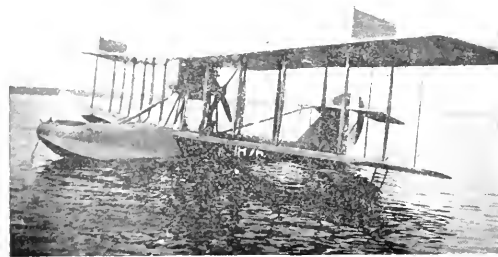
The visitor to the nursery is struck with the great variety as well as the large number of trees that are being grown, both hard and soft woods and at all ages from one year to ten years. In addition to the young growth and artificial plantings there is a section of some 25 acres of the original wood that was on the property when it was taken over by the Department, and experiments and demonstrations are conducted on this section so as to get data on actual woods conditions. So far, nothing has been published on the progress of this work, and it is to be hoped that there will soon be a report in print of the information derived from this bit of investigation.

In conducting the party about the premises Mr. Piche, the chief forester for Quebec, gave much valuable information in regard to species and conditions of growth and the impromptu discussions among the members of the party furnished an interesting and helpful part of the program.

After a tour of the nurseries a short meeting was held in the dining room of the pavilion, and an interesting address of welcome was made by Hon. Jules Allard, Minister of Lands & Forests for Quebec, and Mr. Piche followed with a paper on Reforestation Problems, which will be published in an early number of the Pulp & Paper Magazine. Mr. Kernan, chairman of the Section, presided and kept the attention of the delegates focused on the problems in

hand. Mr. Piche's paper was followed by a brief discussion to which Ellwood Wilson, of the Laurentide Co., and F. W. Reed, of the U. S. Forest Service, were the principal contributors.

The principal point discussed was the matter of disposing of slash, and it seemed from the remarks that it would be necessary to adopt a different plan of administering forest affairs than the present diameter limit for control of cutting. It seems that so far this plan has been a failure, as it was founded on a misunderstanding of conditions. When the diameter limit was established it was believed that a second cut could be made, and that in the meantime the trees left from the first cutting would increase rapidly in growth. The trees that are left are not young trees that will grow up, but old stunted growth that remain small. As Mr. Wilson said, "We cannot afford, after 50 years, to establish camps to cut only 1½ cords per acre." By cutting clean under proper regulation we would get good natural reforestation. Although this might not be as uni-



Hydroplane loaned by Government to St. Maurice Forest Protective Association for demonstration work in locating forest fires.

form or of as good selection as artificial reforestation would produce, yet the extra cost of the latter might amount to more than the extra benefit.

It was further shown that clean cutting is the prerequisite to satisfactory disposal of slash, and it was further pointed out by Mr. Wilson and emphasized by others that slash **must** be disposed of if we are to make headway in forest protection, both from fire and other enemies. With three or four feet of debris on the ground it is impossible to do anything when a fire gets started. These slash beds were not so dangerous when small areas were logged over, but now large areas are being cut, and these are becoming contiguous. This means that when a fire starts it is a bigger fire and kills timber, seed and soil and makes fire fighting continually more costly. There is no other way that fires can be stopped. It will cost more to produce lumber and pulpwood if the slash is burned, but by requiring it of everybody makes it fair to all.

Mr. W. G. Power emphasized the advantage of clean cutting in connection with slash disposal, and drew further attention to the losses from blown down

lumber, where scattered trees are left rather unprotected. Mr. Power added that he had been experimenting on reproduction of burned over land at a cost of \$23 per acre, and hoped to get some experimental results and useful data.

Mr. Reed outlined methods of the U. S. Government in selling stumpage which is disposed of on conditions determined by a careful survey, and investigation of the timber limit in question. He showed that in a North Carolina limit of hard wood the cost of logging was 25¢ per 1,000 on 25,000,000 feet. He raised the question whether this \$6,000 which was allowed the licensee for logging would not have produced better results if put into extra forest protection. Mr. Reed said that in cutting spruce timber he preferred to have it cut clean.

Some of the delegates departed in automobiles and others took the train for Three Rivers, eating dinner on the way. At Three Rivers two special sleepers were attached to the train for Grand'Mere, which was reached about 9.30, and the party spent the night in the cars. Thursday morning was wet and dreary, but in spite of a sprinkle nearly everyone tramped over the plantation at Grand'Mere and across the golf links, after a very satisfactory breakfast at Laurentide Inn.

Toward noon the party returned to the cars, which were taken to the Laurentide nurseries, and reforested area at Proulx, where an excellent layout was inspected. The Laurentide Company planted 912,000 seedlings this year, and will be in a position to plant over a million annually from their seed beds. A considerable variety of pulpwood trees were seen in excellent condition. The plantings of Scotch pine that were made several years ago are showing excellent growth, and even show quite a difference over their appearance last year.

The climax of the meeting was the hydroplane demonstration at Lac Tortue, where Mr. Graham and his mechanic, Mr. Kehre, favored the delegates with an exhibition of how a hydroplane behaves on a rainy day. The party had nearly finished a bountiful lunch served from the company's lumber camp table equipment, and consisting of a most varied menu, from pea-soup to Frontenac, and just as chairman Kernan was trying to call the meeting to order for the report of the committee on resolutions a whirr was heard on the lake, and there was an immediate scramble to find points from which the hydroplane could be watched. Mr. Graham took the flying boat down the lake with the wind for perhaps half a mile slowly, then coming quickly about the propeller whizzed more rapidly and presently someone cried, "She's clear." Mr. Graham then brought his craft gracefully with the wind and sailed round in huge circles so as to pass twice over the heads of the delegates at an elevation of about 200 feet. He then brought the boat to the surface of the water with scarcely a splash, and finally brought her up to the buoy as cleverly and easily as one would manipulate a motor boat. The meeting then bear a hasty retreat to the cars, for there was barely time to make connections for the homeward bound train at Grand'Mere, and the growing storm was not conducive to loitering.

Mr. Kernan's persistence finally succeeded in getting a meeting under way on the train, and the report of the committee on resolutions which follows was adopted amid great enthusiasm. Hon. Jules Allard replied in a few appropriate sentences to the ref-

erence made to his department and the 2.15 train was held at Grand'Mere until the special Pullmans could be attached, and thus ended what was declared the most successful meeting of foresters and woodsmen ever held in Canada. The opportunities for discussing actual cases on the spot were fully appreciated and taken advantage of.

The resolutions are as follows:

Resolved, that in the opinion of this meeting certain changes in the regulations of lands and forests governing the cutting of timber on Crown Lands are essential to the preservation and perpetuation of the forests, and it is respectfully requested that the Executive Committee of the Pulp and Paper Association appoint a committee to co-operate with the existing committee of the Province of Quebec Limit Holders' Association in waiting upon the Government with a view to urging upon it the necessity of an early revision of these regulations to meet present day conditions.

Resolved, that this meeting takes the opportunity of expressing its gratitude to the Government of the Provinces of Quebec, and The Hon. Jules Allard, Minister of Lands and Forests, for the invaluable work in organizing the preservation and perpetuation of the forests in this province, and in view of the vital nature of this organization in the interests of the future welfare of this Province that it is urged by this meeting on the Government, to preserve its present status in order to insure the various problems being brought to a satisfactory conclusion.

Resolved, that a cordial vote of thanks be tendered the Government of the Province of Quebec and The Honorable Jules Allard, Minister of Lands and Forests, for the hospitable manner in which this meeting has been received at the Government tree nurseries at Berthier, and this meeting begs to record its appreciation of the high honor conferred upon it by the presence of Hon. Jules Allard.

Resolved, that the hearty thanks of this meeting was tendered to Mr. G. C. Piche, Chief of the Forestry Service, and his assistants for their courtesy and attention to the welfare of those attending this meeting.

Resolved, that the sincere thanks of this meeting be hereby tendered the Laurentide Company for the hospitable manner with which they have received the delegates to this meeting, and we wish to re-register our deep appreciation of Mr. Ellwood Wilson's successful efforts to provide instruction and entertainment for us.

Committee on Resolutions,

J. P. MacLAURIN,  
JAS. M. WALKER,  
W. G. POWER,  
J. M. DALTON.

#### BATES IS BACK.

E. S. Bates, of Bates & Bates, Montreal, is back from a trip to England. He was prevented from getting to France because of finding so much business in England. Mr. Bates has already resumed his visits to the pulp and paper mills, gathering in orders for the well-known Bates & Innes felts.

The Canadian Barking Drum Company has just received a contract for another American barking drum for the Lake Superior Paper Co., making the 16th drum for this concern.

## British Regulations as to the Importation of Paper

For those interested in British trade and possibly not familiar with the latest regulations, the following is given out by the Board of Trade, Paper Import Restrictions Department, 23 Buckingham Gate, London, S.W.1.

From May 1st the importation of paper and manufactures thereof is prohibited except under license, save that no licenses are required for the importation from the British Empire of Paper and manufactures thereof produced in the British Empire. The conditions under which licenses will be issued are as follows:

1. **Writing or Printing Paper** and other papers not included in Clauses 2 to 6. Import licenses will only be issued for qualities or descriptions falling within this category, provided that the Board of Trade is satisfied that such qualities or descriptions of Imperial manufacture cannot be obtained in sufficient quantities within the British Empire and, or that the prices demanded for such qualities or descriptions are unreasonable.

2. **Newsprint, Glazed or Unglazed.** In reels or sheets (not containing more than 30 per cent. Chemical Pulp.) Import Licenses will be issued in this category to the extent of 25 per cent. of the purchases after this date of paper of the same descriptions produced in the British Empire.

If the Board of Trade is satisfied that such qualities or descriptions of Imperial manufacture cannot be obtained in sufficient quantities within the British Empire and, or that the prices demanded for such qualities or descriptions are unreasonable, it may issue licenses in excess of 25 per cent.

3. **Paper or Cardboard, Printed or Coated.** By printed paper is meant paper printed only with designs or background and suitable for further printing. Coated paper includes carbon but excludes sensitized photographic paper.

Import licenses will be issued in this category to the extent of 20 per cent. of the purchases after this date of paper of the same descriptions produced in the British Empire.

If the Board of Trade is satisfied that such qualities or descriptions of Imperial manufacture cannot be obtained in sufficient quantities within the British Empire and, or that the prices demanded for such qualities or descriptions are unreasonable it may issue licenses in excess of the 20 per cent.

4. **Printed matter.** Printed forms, Writing Paper with Printed Headings, Calendars, Showcards, Picture postcards, Christmas and Greeting cards, and other color and lithographic printing (except as described in Clause 3) including Children's Toy Books (consisting in regard to cover and contents of one-third or more of lithographic or other color printing) will be totally prohibited. Licenses may, however, be granted for small quantities of stationery, etc., for use in branch offices of foreign firms not intended for resale, and may also be granted in special cases for small quantities of other articles in this clause.

Other Printed Matter such as books, newspapers, periodicals, catalogues, price lists, and music, published in foreign countries, authors' typewritten and printed imported without license from all sources, printed proofs, and legal and commercial documents may

5. **Wrapping and Packing Paper.** Important licenses will be issued in this category to the extent of 25 per cent. of the purchases after this date of paper of the same description produced in the British Empire.

If the Board of Trade is satisfied that such qualities or descriptions of Imperial manufacture cannot be obtained in sufficient quantities within the British Empire, and, or that the prices demanded for such qualities or descriptions are unreasonable, it may issue additional licenses in excess of the 25 per cent.

6. **Cardboard.** Including Strawboard, Millboard, Leather-board, Wood Pulp Board, and other Board, excepting other Pulp Board, Ivory Board and Paste Board. Minimum substance of Strawboards, 25 by 30 inches—4 ounces per sheet, other grades 20 by 25 inches—4 ounces per sheet.

Import licenses will be issued in this category to the extent of 25 per cent. of the purchases after this date of Cardboard of the same descriptions produced within the British Empire.

If the Board of Trade is satisfied that such qualities or descriptions of Imperial manufacture cannot be obtained in sufficient quantities within the British Empire and, or that the prices demanded for such qualities or descriptions are unreasonable, it may issue licenses in excess of the 25 per cent.

7. Applicants for licenses for the importation of foreign paper must produce invoices proving, to the satisfaction of the Board of Trade, their purchases within the British Empire, together with copies of their orders showing the date of such purchases.

8. Where the applicants have not purchased their supplies obtained within the Empire direct from a mill and desire to obtain their foreign supplies through another supplier, or to import direct, they must also submit a certificate from their suppliers, to the effect that the supplies in question have been purchased by such suppliers direct from a mill within the British Empire.

9. Where a purchaser from a merchant desires to purchase any foreign supplies to which he is entitled under these regulations, he must claim such supplies or the corresponding certificate at the time of his original or qualifying purchase.

10. The Board of Trade will also grant licenses to import supplies already purchased from sources without the British Empire provided that the orders were given and accepted prior to the 16th April, 1919. If ordered after that date and before the date of publication of this notice the tonnage will be licensed, but is deductible from any other import license to which the applicant may eventually be entitled.

11. During the existence of these import restrictions, it is a condition that all paper manufacturers, merchants, and importers in Great Britain and Ireland must, if prices be not mutually agreed, supply customers at prices to be determined by the Board of Trade. In default thereof, and provided that the Board of Trade be satisfied that supplies cannot, under proper conditions, be obtained from other Imperial sources, the Board of Trade will issue an import license to the customer.

12. The term "Paper" used in these regulations includes all kinds of writing and printing paper, printed paper hangings, other printed or coated papers (except sensitized photographic paper) wrapping or packing paper, insulating paper, abrasive

paper, filter paper and filter pulp, strawboard, mill-board, wood pulp board, or unperforated wood pulp; and whether printed or otherwise, paper bags, envelopes, and manufactured stationery, boxes and cartons of paper, or cardboard; and manufactures of paper and cardboard in which paper or cardboard is the predominant material; all printed matter included in Clause 1 and all other kinds of paper not specified herein, but excluding pictures and drawings executed by hand, prints, engravings, photographs, maps, plans, diagrams, and charts.

13. Licenses will be granted subject to the condition that licensees comply with the regulations and requirements of the Board of Trade. Licenses cannot be transferred except with the consent of the Board of Trade; they cannot be bought or sold, and are subject to withdrawal at any time.

No importation from Countries without the British Empire must be made without first procuring a license.

Instructions are given at the end hereof covering cases where the licensee purchases through another importer foreign supplies to be cleared upon the license of the licensee.

14. Licenses issued by the Controller of Paper are hereby cancelled.

Applications for licenses should be made to The Secretary, Board of Trade, Paper Import Restrictions Department, 23 Buckingham Gate, S.W.1.

**Instructions as to the Clearance Through H. M. Customs of Paper, Etc., by Persons Other Than the License Holder.**

Where bills of lading are in the name of the licensee, a representative or agent of the licensee holder may effect clearance as heretofore.

If the bills of lading are not in the name of the licensee holder, he must request the Board of Trade in writing, to authorize the use of this license by his agent or supplier. The application must contain:—

1. The name of the person to whom the authority is to be issued which must correspond with that on the bill of lading.

2. Weight and description of the goods; i.e., newsprint, paper or cardboard, printed or coated, wrapping and packing paper, cardboard.

3. A declaration that the whole of the tonnage to be cleared is for the account of the licensee holder.

4. The date on which the goods were purchased. If not purchased before the date of shipment a permit will be refused.

The application should be sent through the person for whom the authority is desired, and must be endorsed by a declaration on the part of the latter that he has contracted to supply the licensee holder with the goods stated.

**ANOTHER ACCIDENT REDUCTION RECORD.**

As a result of energetic, well organized safety work, the accident frequency at the Mare Island Navy Yard, California, has steadily decreased. The rate for last December was 75 per cent. below that of September, 1917. This remarkable reduction was accomplished in the face of an increase of nearly 100 per cent. in the number of employees.

It is desirable to locate the shafting and machinery so that belts shall run off from each other in opposite directions, as this arrangement will relieve the bearings from the friction that would result where the belts all pull one way on the shaft.

**U. S. IMPORTS OF NEWSPRINT FELL OFF.**

The principal reasons for lost time were lack of labor, lack of orders and repairs. Other reasons include lack of material, lack of power, etc. The total time lost in April was 250,057 machine hours, as compared with 197,550 for May.

Stocks of newsprint, paperboard, wrapping and bag paper decreased during the month of May. Stocks of all other grades increased. Stocks of all grades reported by manufacturers at the end of May amounted to 291,247 tons including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks aggregating 171,591 tons.

**Ratio of Stocks to Average Production.**

Comparing the stocks on hand at the domestic mills on May 31st with their average daily production based upon the weekly and monthly reports for the 12 months' period ended March 31, 1919, the figures show that:

Newsprint mill stocks equal slightly more than 6 days' average output.

Book paper mill stocks equal slightly less than 13 days' average output.

Paperboard mill stocks equal slightly less than 10 days' average output.

Wrapping paper mill stocks equal slightly more than 31 days' average output.

Bag paper mill stocks equal slightly more than 10 days' average output.

Fine paper mill stocks equal slightly less than 32 days' average output.

Tissue paper mill stocks equal slightly less than 22 days' average output.

Hanging paper mill stocks equal slightly more than 20 days' average output.

Felts and building paper mill stocks equal slightly less than 11 days' average output.

Miscellaneous paper mill stocks slightly more than 28 days' average output.

Total paper mill stocks of all grades equal slightly less than 15 days' average output.

Relation of the various grades of paper to total production for May, 1919, shows the distribution to be as follows: Newsprint, 22 per cent.; book paper, 16 per cent.; paperboard, 32 per cent.; wrapping, 12 per cent.; bag, 2 per cent.; fine, 5 per cent.; tissue, 2 per cent.; hanging, 1 per cent.; felts and building, 5 per cent.; specialties (n.e.s.), 3 per cent. Total production, 100 per cent.

Newsprint is the only grade of which the United States is a heavy importer. Practically all of this tonnage is imported from Canada. The value of the exports of newsprint in April, 1919, amounted to slightly more than \$750,000 as compared with imports of more than \$3,000,000.

Book paper and fine paper are the principal grades exported, the combined value of the two amounting to more than two and one-half million dollars for April, 1919.

Book paper to the amount of \$6,393 was imported in April, 1919, as against none for April, 1918.

The value of the total imports of all grades was practically the same for April, 1919, as for April, 1918. The value of the total exports, however, for April, 1919, was more than twice the value of the exports for April, 1918, and exceeded the imports by more than two million dollars.—Federal Trade Commission.





## Technical Section



### BRING THE T. S. LADIES.

Because of the especially pleasant circumstances of the trip planned for the summer meeting of the Technical Section, it is expected that a number of members will wish to bring their wives with them. The Secretary quotes in the program a verse from Gay:

"And when a lady's in the case,

Of course all other things give place."

This is not entirely true, as a very interesting business session will be held on the boat, and the main object of the meeting, an inspection of the excellent pulp, paper and board mills of Price Bros. & Co., at Kenogami, is an event not to be easily passed up by any one. Every member should make a special effort to attend.

Send in your reply and cash immediately to be sure of a berth.

The program reads:—

Leave Montreal, Monday, July 28th, steamer "Montreal," from Canada Steamships Co. wharf, 7 p.m.

Leave Quebec, Tuesday, July 29th, steamer "Murray Bay," 8 a.m.

Arrive Chicoutimi, Wednesday, July 30th, according to tide (Wednesday morning), 5 to 8 a.m.

By rail from Chicoutimi to mills at Kenogami. Visit to plant as guests of Messrs. Price Bros. and Company, Limited.

By rail (Wednesday night) from Kenogami to St. Alphonse. Sleep on board steamer.

Leave St. Alphonse, Thursday, July 31st, 7 a.m.

Arrive Quebec, Thursday, July 31st, 9 p.m.

Arrive Montreal on steamer, Friday, August 1st, 9:30 a.m.

Rate from Montreal—Chicoutimi and return, including meals and berth, \$26.75.

Rate from Quebec—Chicoutimi and return, including meals and berth, \$15.75.

Please return enclosed card to the Association with money order for the amount of the ticket required, made payable to Canada Steamships Company.

To enable proper accommodation to be provided, replies must be received on or before 10th July, 1919.

Program of Business Session to be held on the boat between Quebec and Chicoutimi:

Reports of Committees.

Paper by Mr. O. F. Bryant: The Requirements and Development of the Laboratory in connection with Paper-Mill Operation.

Paper by Mr. G. Meerbergen on Export Packing.

Informal Discussion.

Chicoutimi is the head of navigation of the Saguenay. The Chicoutimi River here joins the Saguenay. From Lake Kenogami, seventeen miles from Chicoutimi, this river falls 486 feet.

Charmingly situated on a hill, Chicoutimi seems to form a little world of its own. Its name seems to be appropriate, meaning in Montagnais dialect, "Up to here it is deep." Chicoutimi was one of the earliest Jesuit missions, and a great fur-trading centre.

Capes Trinity and Eternity, about midway between Chicoutimi and Tadoussac. They are on the south

side, and 1,800 feet in height, and face one another with a small bay intervening. Trinity is the more westerly of the two, and, while one mountain, it has three elevations, as seen from the Saguenay, hence its name, and as you gaze up its unbroken steep, it appears as if it might fall over and crush the steamer. From the capes to Tadoussac the scenery is of the grandest possible description.

The entrance to the Saguenay is guarded on the west by Point aux Bouleaux and on the eastern side by Point aux Vaches. We land at Tadoussac, and the trip through this mighty cataclysm of nature is over. Its stupendous depths of a mile and a half in places indicates no ordinary channel rather a great rift, the result of glacial action, which the waters were compelled to fill before they could find further vent.

### NEW MEMBERS.

It is a pleasure to announce the election to the Technical Section of the following as student members:

C. G. Malcolm, Esq., Price Bros. & Co., Kenogami, Que.; G. H. LaFontaine, Esq., Rolland Paper Co., Mont Rolland, Que.; R. I. Wynne Roberts, Esq., Don Valley Paper Mills, Don Mills Road, Toronto, Ont.; W. C. Munro, Esq., Price Bros. & Co., Kenogami, Que.; John Buss, Esq., Wayagamack Pulp & Paper Co., 64 St. Julie St., Three Rivers, Que.

### REVIEW OF RECENT LITERATURE.

**R-5. Census of Pulp and Paper Industry, 1917.**—Pulp and Paper, 17, No. 20, p. 465, 1919.—R. C.

**R-7. Making men like their jobs.** R. B. Wolf.—Pulp & Paper Magazine, 17, No. 3, p. 55 (1919).—R. C.

**R-9. Tariffs demanded by the French paper industry. (Les tarifs douaniers reclames par l'industrie francaise du papier).** J. Micol de Portemont, La Papier, 22, p. 104, 1919.—A discussion of the situation of the French paper industry and an explanation of why a high protective tariff is required to enable it to tide over the crisis brought about by the war.—A. P.-C.

**R-12. Cost of Swedish newsprint in France. (Le Papier-journal en France.)** Le Papier, 22, p. 111, 1919.—A discussion of the causes which have enormously increased the price of Swedish newsprint in France; increased cost of raw materials and labor, scarcity of raw materials, high freight and insurance rates, frequent fluctuations in the rate of exchange; followed by a discussion of the means to be taken to reduce the price.—A. P.-C.

**A Turn for the Worse.**—W. M. Aiken thought he would relieve his "Buddy" on the night shift a few minutes early, so he started to work without changing his clothes, intending to put on his overalls a little later. In three minutes his coat tail had caught on the winder shaft and Aiken was whirled around. Fortunately, he was not killed. You may not be so lucky. You can buy a new suit, but not an arm or a life. Never wear loose or flowing garments when working near moving machinery, and don't have projecting set screws and such danger traps on your machine.

# PULP AND PAPER NEWS

Notices have been sent to the Canadian paper trade by the Canadian Reconstruction Association, which has been urging the development of the home market and making appeals for the purchase of Made in Canada. This summer the Association will conduct a special poster campaign in cities and towns throughout the whole of the Dominion. To supplement this there has been issued a series of twelve colored pictorial cards, which are designed for direct circulation to purchasers and employees. Canadian manufacturers are being urged to give adequate circulation to these cards in business letters, pay envelopes, pay cheques and general distribution. There is room on the cards for the printing of the firm's name or trade mark. The headquarters of the Royal Canadian Reconstruction Association are at 1204 Royal Bank Building, Toronto.

A new paper jobbing firm will start business in Toronto next week at 104 Front street east, handling all lines of wrapping paper, paper bags, and twines. The firm's name will be Cameron and Fraser, being composed of W. A. Cameron, who has been for several years on the travelling staff of Walter Woods and Co., Hamilton, and Alex Fraser, who has been with Kilgour Bros., Toronto. Both men are well and favorably known to the trade, and will carry a complete and representative stock.

E. G. R. Clarke, who has been with the Canadian Expeditionary Corps to Siberia, has returned to Toronto, and his many friends in the paper trade are pleased to welcome him back. For some years he was manager of the Toronto branch of the National Paper Co., and later was with the Specialty Bag Paper Co., representing that organization on the road.

Supplementary letters patent have been granted by the Province of Quebec changing the name of The Saguenay Power Company to that of the Saguenay Pulp & Power Co., and granting additional powers of manufacturing pulp and paper, and all articles in the making of which wood, pulp and paper may be utilized; to manufacture lime, bricks and to work quarries and to lease houses for and to employees, etc. The capital stock has been increased from \$3,000,000 to \$9,000,000. The chief place of business of the Corporation will be in Montreal instead of Chicoutimi, Que.

A charter has been granted to the St. Maurice Valley Chronicle Co., Limited, with headquarters at Three Rivers, Que., and a capital stock of \$49,500, to carry on a general printing, publishing, lithographing and other business. The incorporators are C. K. Stewart and Arthur Gelin, of Three Rivers.

In the recent Quebec Provincial Election H. Biermans, general manager of the Belgo-Canadian Pulp & Paper Co., Shawinigan Falls, Que., contested the riding as an Independent candidate in St. Maurice, against Geo. Delisle, Liberal, and Dr. Dufresne, Conservative. Mr. Delisle was the successful candidate. It was a close decision.

Miss Beatrice Maud Tobin, youngest daughter of

Edmund W. Tobin, M.P., vice-president of The Brompton Pulp & Paper Company, and a well-known lumberman, was married recently to Joseph Omer Asselin of Quebec, formerly of Sherbrooke. The ceremony was quietly celebrated at Bromptonville. Mr. Asselin and bride will reside in Quebec City.

The big plant of the Whalen Pulp & Paper Mills Co. at Mill Creek, B.C., has closed down because of conditions caused by the Vancouver strike. It has been found impossible to get the large product out on account of lack of shipping facilities, and thus 300 men have been thrown out of employment, although it is not expected the shut down will last more than a few days. The Whalen Company found it would be impossible to keep going owing to the congested condition of their warehouses, and made an arrangement with the Britannia Mining Company, whose mines are situated only a few miles from Mill Creek, to take as many of the men as desired to go. Quite a number took advantage of the offer, and those who did were told that they were at liberty to remain in their houses rent free during the period of the shut down.

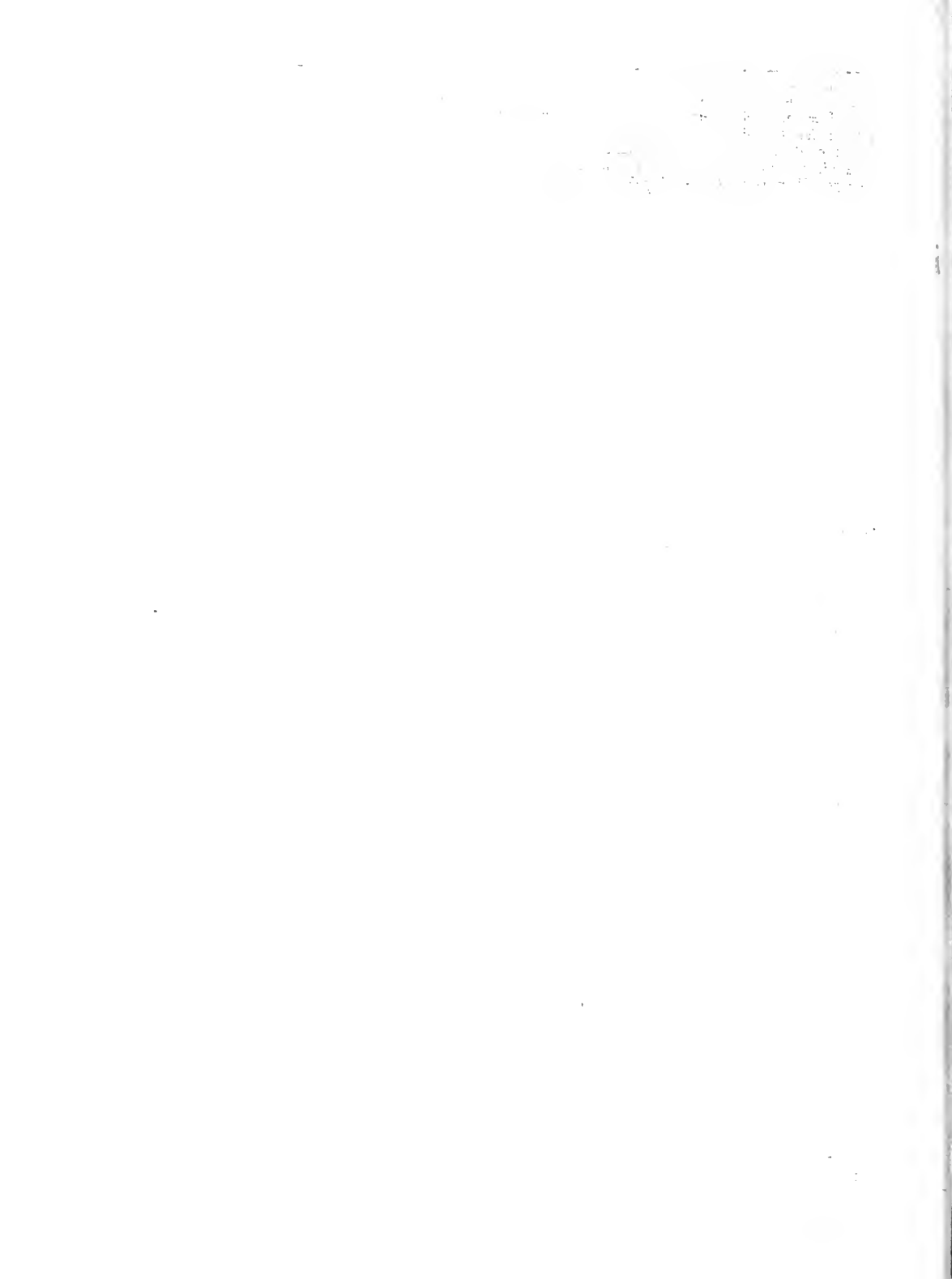
R. W. McLellan, of Fredericton, N.B., secretary of the New Brunswick Lumbermen's Association, who recently returned from an extended business trip to Great Britain and Ireland, states that conferences which were held in New York on his return, have convinced him that the pulp and paper business is now in that condition which means there is no prospect of advancing prices or even a return to last year's figures. The pulp and paper industry must await a return to something nearer normal conditions before its future can be accurately forecasted.

"The Sanitary and Heating Journal," which was launched in Toronto a few months ago, has been taken over by the manager, Edwin Newsome, who has opened an office at 100 King St. West, and will issue the publication twice a month under the direction of the Newsome Publishing Co.

Burnside Robinson, financial editor of the Mail and Empire, Toronto, a former well known Ottawa and Montreal newspaper man, and a son of C. Blackett Robinson, the veteran publisher of Ottawa, has joined the ranks of the benedictis, being married on June 28 in the Church of the Redeem, to Miss Ethel Sara Louise, daughter of the late Edward L. Piper, Farnham Ave., Toronto. Mr. Robinson and bride left on an extended trip to the Coast, and on their return will reside in Farnham Ave., Toronto.

A charter has been granted to the Frontier College, which has been established since 1900. The principal is Alfred Fitzpatrick, and the head office 67 Yonge street, Toronto. The Frontier College undertakes reading and other instructional work among the employees of lumbering, pulp wood, mining and other camps. Further extension plans are under way.

A. D. Huff, formerly traffic manager of the Canadian Export Paper Co., Montreal, has been appointed traffic manager of the Riordon Sales Co., Limited, Montreal, and has entered upon his new duties.







### CANADIAN TRADE CONDITIONS.

Toronto, June 30.—So far as the general market conditions are concerned, there is not much change, and there are no alterations in prices to report. The general trade situation so far as Toronto itself is affected, has been badly hit by the street car men's strike, and the usual amount of buying has fallen off. It is not expected that business will resume its normal activity for another week or so, owing to Tuesday, which is Dominion Day, being a holiday, while the labor trouble will not be adjusted for a few days yet, according to present indications. In the province, however, there has been a good demand, and travellers report the past was a satisfactory one. Buying in all lines is going on freely, and a good summer turnover is expected. June has been a satisfactory month, and wholesalers and mills have little to complain of. There is a good demand for newsprint, and stocks have been reduced considerably. In all lines of paper the period of hesitation which prevailed for many weeks, is now pretty well a thing of the past, and since the Peace Treaty has been signed and the budget brought down by the Federal Government and the tariff changes announced, a feeling of steadiness and confidence is prevailing.

It is thought that the worst of labor troubles in most cities are now over, and that, within a few weeks, at the most, the general spirit of restlessness, which has characterized industrial workers, will be numbered among past events. Business is growing more stable each week, and mills continue to report business good. American travellers for paper manufacturers have ceased coming to Canada to look for orders at cut prices, their plants getting busy at home, where the domestic demand has been increasing all the while.

Another evidence of the faith in the future is witnessed by the launching of a number of new trade journals, no less than five appearing in various fields in the Dominion during the past few weeks. Shipping is improving all the time, and now that the majority of the soldiers are home from Europe, more vessels should be available for transport. The number of foreign inquiries increases all the while, and Canada

is being looked to for paper stocks of all kinds. The sulphite market is strengthening and orders are much more plentiful than a few weeks ago. Cheaper paper cannot be looked for in Canada, as most of the mills have made substantial advances recently to their employees. This, along with added expense of production, means that present values will hold. There is only one thing which would lend inducement to a lowering of quotations, and that is if a slump comes and just now there is no evidence of anything in this direction. Export business will in all probability take care of any surplus production.

All the paper and pulp companies continue to pay their regular dividends, and there is an active demand for any stocks that are offering. Canada is doing its share in getting after foreign business, and the fact that trade commissioners of the Dominion, who are located in South Africa, New Zealand, China, Australia, England and other countries are now on their way to Ottawa to confer with manufacturers, is a hopeful sign that opportunity will be afforded to cater to the markets of these countries, as the "missionaries" will have a vast amount of information to place before the pulp and paper manufacturers and others.

There is a lively demand for kraft paper, and a number of the mills have booked satisfactory orders for overseas business. Toilet and tissue mills are rushed to the limit, and are weeks behind in their deliveries. Wrapping paper plants are also active, and so are paper box factories. The market for ground-wood pulp remains the same, and water conditions are still good, the recent rains having caused the streams, which had begun to dry up owing to the hot weather, to have a normal flow. The announcement that genuine vegetable parchment papers will soon be made in Canada is another evidence of the expansion of the trade. There is a fair demand for pulpwood and it looks as if there will be an abundance of labor this fall to undertake cutting operations.

Surveying the field generally, it is pointed out that the world never had such need of great quantities of paper as it has to-day, and new school books will

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Bleached and Unbleached of  
Canadian manufacture.  
Write and let us show you  
what we can do.

be issued, new histories written, and new geographies printed, while the use of paper containers for all kinds of goods is extending all the while. Bread wrapping is likely to come into general use, and then two of the largest religious denominations in Canada have issued new hymn books. Opportunities are larger and broader than ever. Export business is increasing all the while, and in every direction there is scope for enlargement and expansion.

Mills are preparing to make extensions and plans, which were laid aside during the period of the war, are once more coming out. Attention is being directed to the future as never before, and in the advertising field there have been very encouraging returns. All special editions of trade and class journals have shown a gratifying gain over previous efforts, and publicity agencies report a large number of new accounts. Every issue of each magazine, whether American or Canadian, shows an increased number of pages. This all means larger tonnage in consumption, and the usual editions of papers show gains from ten to twenty-five per cent. in the number of reading pages over those of a year ago. Another evidence of the trend of the times is that American supply and equipment houses are opening offices in Canada, and want to be on the ground floor, in the big business that is coming. On the whole the outlook is most encouraging.

The rag and paper stock market is active, and in most lines of cuttings there has been an advance in price. Soft white shavings and magazine stock are in steady requisition, and in the former there has been an advance of fifteen cents, and in the latter thirty-five cents. All other grades are quiet, although expected to pick up at any time because all classes of mills are gradually becoming busier. Box board, writing and book plants for the most part, and specialty mills are favored with plenty of orders. There is a better demand for all grades of new cotton rags, and American consumers are looking for stock. There has been a considerable jump in roofing stock, and it seems that the top has not yet been reached.

**Rag and Paper Stock Prices.**

No. 1 white envelope cuttings . . . . .	\$3.35
No. 1 soft white shavings . . . . .	\$3.15
White Blanks . . . . .	\$1.10
Heavy Ledger Stock . . . . .	\$2.00
No. 1 magazine . . . . .	\$1.65
No. 1 book stock . . . . .	\$1.25
No. 1 manilas . . . . .	\$1.65
No. 1 print manila . . . . .	.70c
Folded news . . . . .	.70c
Over issue, news . . . . .	.80c
Kraft . . . . .	\$2.50
No. 1 clean mixed papers . . . . .	.55c
No. 1 shirt cuttings . . . . .	11—11½
No. 1 unbleached cotton cuttings . . . . .	10—10½
No. 1 fancy shirt cuttings . . . . .	\$1.2c
No. 1 blue overall cuttings . . . . .	.8c
Bleached shoe clip . . . . .	.9c
White cotton hosiery cuttings . . . . .	12c
Light colored hosiery cuttings . . . . .	.9c
New light flannelette cuttings . . . . .	\$1.2c
No. 2 white shirt cuttings . . . . .	\$1.2c
City thirds and blues, repacked, No. 1 . . . . .	.4c
Flock and satinettes . . . . .	\$2.30
Tailor Rags . . . . .	\$2.00

**NEW YORK MARKETS.**

New York, June 28.—Business of consistently good volume has been transacted in the various grades of paper this week, and the market has continued to work into a stronger position from every point of view, technically and otherwise. Demand from consuming sources has been well maintained, and, in some instances, has undergone further expansion. Prices on the whole have been little altered but they are characterized by a distinctly firmer tone and indications are that advancement is brewing in quotations on many lines of paper. Emphasis continues to be placed by manufacturers on the increasing cost of production, and developments are such as to bear out the contentions of mill men that it is costing them more day by day to manufacture their product. In this connection can be mentioned the increase in wages granted its employees by the International Paper Company which will increase the payroll of the company by upwards of \$1,000,000 per annum, and also the sharp rise in prices on rags and other kinds of raw material. Under the circumstances, it is not surprising that manufacturers are so intent on receiving full quoted prices when entering into commitments at present.

Probably the strongest end of the market still lies in book papers. Most mills making this class of paper are sold so far ahead that they are refusing to accept further orders, and buyers are experiencing no little difficulty in filling their wants. Coated book papers especially are in demand, and leading producers refuse to quote. It can safely be stated that the current production of book paper of practically all grades is well above normal for this time of the year, and indications are that mills will be kept humming throughout the summer months.

Activity in fine papers also is steadily expanding, and prices are looking upward. Writing mills with few exceptions are running at greater capacity than for many months and are shipping out the bulk of their product almost as quickly as it becomes available. Tissues are firm and moving in a consistent manner, while business with the coarse paper mills is on the increase.

Newsprint is firmly quoted and is still being absorbed in large tonnage by consumers. As an illustration of the heavy consumption of newsprint at present in the States may be cited a record edition of 40 pages printed by one of the New York morning newspapers one day this week. The paper was so thick that it greatly resembled a Sunday issue. Very little newsprint is being offered in the open market, due to the fact that most mills have their hands full in keeping contract customers supplied.

The board market is gradually improving but business continues to be below a par with that passing in the various grades of paper. Mills as a rule are operating on a restricted scale, being unable to secure sufficient orders to warrant full time operation, yet demand is expanding and the probabilities are the market will become much more active within the next few weeks when box makers commence laying in fall stocks.

**Groundwood**—The market for groundwood pulp has strengthened to a perceptible degree during the past few days, and quotations have been advanced. Grinders in common are now refusing to enter into engagements for sizable quantities of pulp at less than \$27 per ton at the producing mill, while numerous manufacturers are quoting \$28 for pulp of prime

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Quotations Solicited.

quality but prompt activity. Considerable talk is heard in the trade, apropos of the probabilities of a serious drought later in the summer, and grinders appear to be conserving their supplies with greater care than they have been recently wont to exercise.

**Chemical Pulp.**—Business in chemical wood pulp has quieted down a bit during the current week. Demand from consuming quarters has not been quite so pronounced as was in evidence in the several preceding weeks, yet the tone of the market has ruled firm and prices have been maintained. Dealers and importers view the lighter call for supplies as nothing more than a natural sequence to the increased buying by paper mills recently, and anticipate a resumption of demand of similar proportions to that lately prevailing in the near future. Soda pulp has been readily sought and prices have moved up a peg. Sales have been recorded at \$90 to \$95 per ton at the pulp mill and most sellers have been insistent on the higher figure for spot lots. Newsprint sulphite continues in good demand and prices are strongly maintained at a range of \$65 to \$70 at the producing point. Domestic bleached sulphite is selling at 5.00 to 6.00 cents a pound, depending on the quality of the pulp and the amount involved, while domestic easy bleaching is moving in a steady manner at an average price of 4.50 cents at the mill.

Importers of Scandinavian pulps are effecting a comparatively good trade. Consumers here are reluctant to meet the prices asked by shippers on the other side, but through a process of making counter offers, import houses are managing to arrange quite a number of transactions, as Scandinavian manufacturers display a willingness to meet buyers half way in the matter of price.

**Rags.**—A strong market exists for paper-making rags and trade activity has shown no let up this week. Mills have continued to place orders for large amounts of material with regularity and the chief complaint heard among dealers is the difficulty experienced in locating all the stock needed to cover their commitments to consumers. Repacked thirds and blues are selling freely at 4.75 to 5.00 cents a pound delivered mills, while rough packing of the same grade of rags commands about half a cent less. White rags are being readily absorbed by writing paper manufacturers, and sales are reported at varying prices, quotations being dependent in a large measure at present on the quality of the packing concerned. No. 1 repacked white rags have sold at as high as 9.50 cents at the mill, while, on the other hand, some lots of rags of

this classification, but of poorer quality have been obtained by consumers at around 7.00 to 7.50 cents. Roofing stock is firm and actively in demand. Local dealers quote at a basis of about \$45 per ton for No. 1 packing, although in the West, producers in numerous instances are demanding \$50 and are declining to sell for less. New cuttings of practically all kinds are moving freely and at high prices. No. 1 white shirt cuttings have sold at 13.50 cents per pound at the mill.

**Old Paper.**—Most descriptions of old paper are moving into consuming channels in fairly large volume, and such changes as have occurred in prices this week have been in an upward direction. Demand has centered largely on book stock, soft white shavings and folded newspapers, and packers of these grades have had little trouble in finding a ready outlet for all the supply they have had to offer. No. 1 heavy books and magazines have sold freely at around 1.80 cents f.o.b. New York, and the movement of this grade out of New York has been of such large proportions recently that the market hereabouts is very nearly cleaned up of unsold accumulations, with the obvious result that dealers are insisting on higher prices when accepting new orders. No. 1 soft white shavings are fetching 3.25 to 3.50 cents New York in sales to mills and very little supply is now to be had at the lower level. Hard white shavings, on the other hand, are noticeably neglected by manufacturers and only occasional sales are recorded, at a price basis of between 4.25 and 4.50 cents f.o.b. New York. Flat folded news, packed according to specification, is selling at an average price of \$12 a ton New York, while No. 1 mixed paper is quoted at around \$10. Kraft paper is sought in moderate volume, with quotations ranging from 2.10 to 2.25 cents a pound.

**Bagging and Rope.**—Further advancement in prices on old rope has occurred and mills are now granting beyond 5.00 cents per pound at the point of shipment for No. 1 Manila rope. Demand continues brisk in spite of comparatively heavy arrivals of foreign rope, and dealers are disposing of stocks as soon as they are accumulated. Strings also are in demand and quotably firm at between 2.25 and 2.50 cents f.o.b. New York. Scrap bagging is moving in a consistent manner though in restricted quantities, with mills paying in the neighborhood of 2.50 cents New York for No. 1 packing. Roofing bagging is in relatively better call than No. 1 scrap and commands proportionately higher prices, sales being recorded at 2.00 cents f.o.b. New York.

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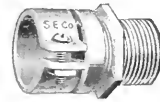
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Application of Steel-Armoured Flexible Cord with Rosette and Socket Adapter



Flexible Steel Conduit Single Strip Type



Flexible Steel Conduit Double Strip Type



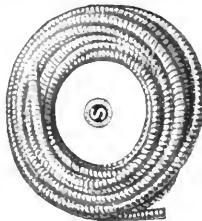
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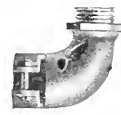
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### THE NEW FEDERAL CHILD LABOR LAW IN THE UNITED STATES.

In June, 1918, the United States Supreme Court declared the Federal Child Labor Law of September, 1916, to be unconstitutional. Immediately following this decision steps were taken towards the framing of a new law that would accomplish the ends aimed at by the law now invalid, but in a manner that would not conflict with the limitations imposed by the constitution. A plan was eventually adopted which provided for levying taxes on the products of child labor offered for shipment in interstate commerce. This provision was incorporated in the act to provide revenue, and approved on February 24, 1919. The main features of the new law have been summarized officially as follows:

"This amendment imposes a tax of 10 per cent. on the net profits from the operation of (a) any mine or quarry situated in the United States in which children under the age of 16 years have been employed or permitted to work during any portion of the taxable year; or (b) any mill, cannery, workshop, factory, or manufacturing establishment situated in the United States in which children under the age of 14 years have been employed or permitted to work, or children between the ages of 14 and 16 years have been employed or permitted to work more than eight hours in any day or more than six days in any week, or after the hour of 7 o'clock p.m. or before the hour of 6 o'clock a.m., during any portion of the taxable year. Such tax is not to apply in the case of an employer relying in good faith upon an employment certificate issued under regulations prescribed by a board composed of

the Secretary of the Treasury, the Secretary of Labor, and the Commissioner of Internal Revenue; nor in the case of an employer who satisfies the Secretary of the Treasury that his employment of a child under the prescribed ages was due to an honest mistake of fact as to the age of such child."

Plans for the enforcement of the law are now practically completed. Being a tax measure its administration must rest with the Secretary of the Treasury, and there is being formed accordingly in the Bureau of Internal Revenue a division to be known as the Child Labor Tax Division. The Secretary of Labor, however, is represented on a board to make regulations as to certificates, etc., and has authority to make inspections of mines, factories, etc. In this way there will be a link between the new division and the Children's Bureau of the Department of Labor.

The new law became effective on April 25 and after that date, employment of one child for one day in conflict with its provisions will, according to an official announcement, subject the employer's business to a tax of 10 per cent. of the net profits for the taxable year.

The Brown Company, of Portland, Me., who have pulp mills at Berlin, N.H., and La Tuque, P.Q., are a party to a dispute with Procter & Gamble (ivory soap) over the validity of a patent for hydrogenating oils, a process used in the manufacture of lard substitutes making use of waste hydrogen from electrolytic bleach manufacture.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

Published every Thursday by The Industrial and Educational Press, Limited, Garden City Press, Ste. Anne de Bellevue, 'Phone 165.

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A. S. Christie, Eastern Manager

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# EDITORIAL

## THE UNFATHOMABLE MIND OF PARLIAMENT.

The interference with the Pulp and Paper Industry of Canada by the Government, a step taken under the War Measures Act, has apparently passed from the realm of Orders-in-Council, made in an emergency, to the field of parliamentary politics. Concisely stated, government control of newsprint is extended until peace is declared. The signing of the treaty has no effect on the case. Instead of making every effort to get this industry back on a normal basis, as is being done with other lines of business, the people on Parliament Hill are exerting themselves to stretch the period of control and restraint of this industry to the very last limit. Up to this time the plea of the publishers to have the paper makers prevented from doing business along lines followed by all other businesses has been satisfied by the orders of the Paper Controller, appointed under the War Measures Act. Now that the war is really over and business is supposed to revert to a normal state we find Parliament taking a hand and passing an Act "to provide for the completion after the declaration of peace of work begun and the final determination of matters pending before the Commissioner and Controller of Paper and the Paper Control Tribunal, or either of them, at the date of such declaration."

A legal opinion is that "the effect of this Act will be to relieve the paper manufacturers of government control of prices and distribution of newsprint from and after the date of the declaration of Peace, whenever that may be."

Nobody knows how long it will take before all the nations involved in the war get around to ratifying the Peace Treaty. It may be months before some popular governments get through discussing and finally adopting it. In the meantime the Pulp and Paper Industry is not justified in proceeding in a broad way with developments in capacity and improvements in plant that are urgently needed. Many fine trade opportunities have been passed up because mills have been discouraged from making extensions that would now enable them to take advantage of splendid openings in the export field. Other lines of business are expanding and publishers are deriving an increasing revenue from the constantly growing amount of advertising. Newspapers are certainly no smaller than they have been and some are distinctly larger. Yet it brings no advantage to the paper manufacturer, who is still saddled, not merely with the burdens of war times but also the ability of the press to get

political action that is becoming a very important business asset. We mean that a direct gift of the difference between what paper is worth and the government regulated price is not to be sneezed at.

The fixed selling price was set entirely on the assumption that the newspapers of Canada would have gone to the wall if they had been obliged to follow business principles in their relations with paper-makers as they did with metal and ink men. The truth of their statement was never investigated. A price was set without any reference to cost of production or provision for profit—to the manufacturer. An immediate dispute arose, which by Act of Parliament is now to be continued. Some people think Canada has had war enough, yet here is a definite effort to prolong its effects.

### Playing Both Ends.

Other lines of business have been investigated by committees and commissions. The "H. C. of L." committee reported to the House of Commons last Saturday night. Press dispatches from Ottawa read: "The committee considered the possibility of effecting some relief either by fixing a price or by placing an embargo on the export of foodstuffs. After careful consideration the committee arrived at the conclusion that to do either of these things would result in most disastrous effects, because 'any effort on the part of the Government or Parliament at price fixing here or at attempting reductions in sale prices which the farmers are receiving, would only intensify the present difficult situation for the reason that it would tend to dry up the sources of supply by directing the productive energy of those now engaged in this industry into other channels; on the other hand, were the Government to place an embargo upon exports of any class of foodstuffs it would not only have the same effect, but the policy would be unsound on economic lines.'"

Let us compare the ease of the farmer with that of the manufacturer. In regard to foodstuffs the committee finds that neither a fixed price nor an embargo is advisable—for farmers. Yet in the paper industry, the same government that received this report and advice has placed an arbitrary price on newsprint, and has placed an embargo on a percentage of the production of our paper mills and holds over the head of the paper maker the threat of a complete embargo if there is any failure to comply with all the hampering regulations of control which should have ended with the King's Proclamation of a day of thanksgiving for the conclusion of the Peace Treaty.

A daily paper heads the paragraph just quoted "Fixed Prices Disastrous." There is no doubt about it, fixed prices have had exactly the effect on the paper industry that the committee predicts for the farmers. The price of wheat was fixed, it is true, but it was fixed with the intention of giving the producer a profit, without any consideration of who was to pay it, or how. And the sale of the product was guaranteed. On the other hand, the fixing of the paper price considered only the consumer. The matter of profit to the producer was of no moment. The manufacturer had to fight for a right to live. Any farmer in Canada can sell every pig and grain of wheat he owns anywhere in the world he pleases. The paper maker is told just what he may export and he is obliged to sell in Canada for six dollars less per ton than his product will bring across the line.

Naturally, the paper industry did not expand and in the words of the committee this price fixing has comparatively dried up the source of supply, because production has not developed in proportion to demands. A beginning is being made now in construction that should already be producing paper, and in some cases would have been doing so, except for interference. England and other countries want newsprint and we can't supply the demand. If a level headed committee had reported on the situation two years ago there would be a different state of affairs to-day.

Is the committee's report actuated entirely by a desire to aid the common consumer of corned beef and cabbage or is there an inclination to put a thumb in the farmer's pie and complacently repeat Jack Horner's eulogy of himself? Certainly the producer of foodstuffs has no complaint to make of the Government's attitude and lack of action. Neither has the publisher any fault to find with the contribution of \$6 a ton on his newsprint—ad infinitum—by the manufacturer, but a favor of the Government. Labor legislation, too, has been entirely in favor of the employee; not that he does not deserve all he gets, but that such acts should bear the stamp "for value received." There are some obligations on the other side, and should be recognized and made enforceable. It is one thing to drive nails in a wooden Hindenburg, but quite another to stick pins in a vital member of a business structure, with his hands tied, and expect him to be enthusiastic about trying to enlarge and improve his part of public service.

It is very seldom that two such diametrically opposite results have come from the same sitting of a governing body as the act to continue the restriction of the newsprint industry and the report of the committee on the cost of the necessities of life that such restriction—fixed price and embargo, is unsound on economic lines. Surely we have found the fountain that giveth both salt water and sweet. (See also page 534.

### EVERYBODY SUFFERS.

Forest fires are raging in Alberta and have again broken out in Ontario. Large amounts of timber have already been destroyed in Quebec and New Brunswick. So far British Columbia has not figured in fire news. There may be a tendency for the man in Montreal to say that the Alberta fire does not affect him, or for the man in Winnipeg to think the destruction of pulpwood in Quebec is none of his concern. That is false reasoning, if reasoning it be. Every fire affects every person in Canada—and elsewhere, for that matter. It means a higher cost of lumber, houses, rent, furniture, paper, cardboard and the articles in or about which they are used. The destruction of the raw material means less work for Canadians now and in the future, and it means industries permanently crippled.

The cost of the care of the forest and its protection is insignificant in comparison with the burden on the nation which is the result of forest fires. If the public can only be impressed with the effect on each individual of the destruction of timber, there would be more care taken in regard to conduct in the woods and more attention by parliaments to the problem of preserving the forest.

### COBWEBS.

No intimation has yet been received as to when the Paper Control Tribunal will hand down a judgment in the matters now before them on appeal.

Last week we printed a review of the recently adopted Federal Child Labor Law of the United States. This was taken from "The Labor Gazette."

It was observed that the baggage men at Grand'Mere handled trunks and suitcases with exceptional care. Some one was mean enough to remark that they were accustomed to receiving breakables.

R. A. McInnis, manager of the Abitibi mill and "Little Father" of Iroquois Falls, is also father of a baby girl. Congratulations!

A medical inspection of insane asylums in one of our provinces stated that the principal causes of insanity are alcohol, syphilis, and heredity. And they are all preventable: by prohibition, health education and the suppression of vice, segregation of mentally deficient and prohibiting marriage among defectives.

Welcome to the Brown Bulletin, the attractive company paper of the Brown Corporation, Berlin Mills, N.H., and La Tuque, Que. The first issue is full of instructive matter as well as interesting notes of the three mills. Our congratulations to the editor and his staff and best wishes for increasing service and success.

# Notes on Reforestation in Quebec

By G. C. PICHE, Chief of the Forest Service, Quebec.

As an introduction to his remarks on Reforestation, Mr. Piche outlined briefly the origin and development of the Nurseries at Berthierville, P.Q., which had been carefully inspected by the visitors immediately after lunch. In fact, one party kept Mr. Piche so long in the woodlot, explaining interesting things, that the meeting was a little delayed. His introduction described the character of the work of the Nurseries, and the variety and number of seedlings available now, and indicated that the probable capacity would, before many years, be 10 million or more annually, instead of 2 or 3 million at present.



There was no doubt of our welcome at the Provincial Nurseries, even without these signs.

Mr. Piche continued:—Having briefly described the work done at the Nursery, we must now consider the question of a progressive policy of reforestation for this Province. It is rather surprising that in a country as rich in forests as ours, it should be necessary to discuss this point, but those who have travelled somewhat through the country have been surprised to see how quickly the forest has disappeared from the shores of the St. Lawrence, and also how the cost of lumber and pulpwood has steadily increased. First of all we must admit that the plantations require so many decades to produce results that it will prevent many persons from investigating part of their money in this operation. Yet in Europe many of the old families have retained their rank through the revenues that they derive in the management of forests planted by their ancestors.

There is no reason why farmers, large corporations, the towns and the Government should not consider this matter in a broad way. There is no use in hiding the truth: there are in this province millions of acres of land that have been empoverished either by improper cultivation or by wasteful lumbering, whilst others have been ruined by repeated fires. According to the Census Reports there would be about three million acres of such lands owned by private people here that would require immediate reforestation. It is certain that upon the timber limits there is also a certain quantity, but as we have no definite survey of same we can only say that its area is very large, perhaps equivalent to that of the private lands.

## Why Should We Plant the Waste Lands?

The reasons that would induce us to plant the lands not fit for cultivation would be the following:

1—To establish a forest cover on these lands so that they may be again put into value and rendered productive of revenue;

2—To prevent, as in the case of shifting sands, the devastation of the adjoining lands;

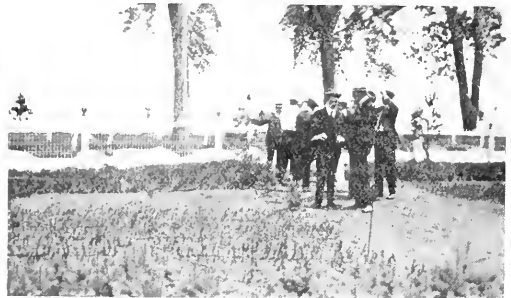
3—To increase the amount of timber per acre in the woodlots or timber limits. The studies made of cut-over lands show that in numerous sections the stock left is very low, and if we consider the forest as capital it will naturally take many years before the compound interest accruing each year by the annual growth of the tree will form a sufficient amount of timber to pay the expenses of lumbering the tract another time.

4—It will be necessary, in many cases, to introduce new species in the forest, especially in the glades, which will increase its wealth;

5.—To protect the headwaters of streams. It is a well known fact that the forest has a great power to retain the moisture and regulate thereby the seepage and run-off;

6.—To shelter the basins of water works. It is not necessary for me to insist upon the good qualities of the water that is found in the gentle streams shadowed by trees in comparison to the poor water found in the ugly brooks running in the open;

7—To furnish the necessary supply of timber for the farmers, and also for the lumbermen, pulp makers and others dependent on this material. The increased development of the lumbering industries, especially that of pulp and paper mills, has produced



A few of the transplants at Berthierville. The large pine is 10 years old. There is a beautiful view across the St. Lawrence.

such a big demand upon the forest that we can see, within a relatively short time, some of the companies having either to reduce their production or to purchase new timber holdings. Owing to the enormous amount of capital invested, the industry must necessarily seek for a continuous supply of their raw material.

8.—The ownership of waste lands by a private owner is such a burden that, too often, they are abandoned and fall to the charge of the rural municipal-

ity, whereas if they were stocked with trees they would have a sufficient future value to induce the owner to pay his taxes.

**Does it Pay to Replant?**

There has been yet no complete survey made of the plantations made in Canada, as many of these plantations are either too young or of too small a size, or made exclusively for experimental purposes.

Therefore we are compelled to seek our information from other sources. For example, according to a booklet on "The Older Plantations in Massachusetts," a plantation made by John Tingwick, of white and



Mr. Piche is proud of his trees. Note this year's growth of 15" on this spruce. A typical demonstration and discussion group.

Scotch pines, has produced in thirty-eight years from 10,000 to 17,000 feet per acre. Those made fifty-five years ago, on the property now held by the Misses Daws and Hobert, have produced trees running from 6 to 17 inches in diameter, and the yield was estimated at 43,000 feet per acre. As you see, these results are very good; the tabulation of all these various inventories has enabled the Forest Service of Massachusetts to publish an estimate of the future production of white pine, and we find that this, on an average quality of soil, will be as follows:

- At the end of 25 years . . . 32,800 feet board measure
- At the end of 50 years . . . 46,500 feet board measure
- At the end of 60 years . . . 53,200 feet board measure

It will be interesting to know what will be the financial return of this investment, and a good forester could not induce anyone to plant without saying what will be the ultimate results of the work. In the above cases the forester has first taken into account the value of the land, calculated at four dollars per acre, and which naturally must pay a rental; then comes the expenses of planting, which were estimated at seven dollars per acre; the taxes must be paid as well as the annual charges of maintenance and protection against fires. Then, all the money spent at the start and afterwards must necessarily pay a rate of interest, which was calculated at five per cent. We find that, after deducting all these expenses from the gross returns of the sale of the timber produced, the plantations would give the following net profits:

- At the end of 30 years . . . \$ 24.85 per acre
- At the end of 40 years . . . \$102.57 per acre
- At the end of 50 years . . . \$248.50 per acre
- At the end of 60 years . . . \$ 90.17 per acre

But if the rate of interest was 6 per cent instead of five, the financial returns would be as follows:

- After 30 years, a loss of . . . . . \$ 4.44 per acre
- After 40 years a profit of . . . . . \$115.76 per acre
- After 50 years a profit of . . . . . \$151.97 per acre
- After 60 years a loss of . . . . . \$114.30 per acre

It will be seen by all these examples that the best time to cut a white pine plantation would be when it has reached the age of about fifty years, that is, when the annual increment in volume will begin to diminish.

Of course the pulp and paper makers are more interested in the question of spruce plantations. Here I must say that we have no positive American nor Canadian data on this subject, and we must use the European figures; they are also very satisfactory. We find that, on an average quality of soil and locality, a spruce plantation may produce the following quantities of timber. Taking all the material over three inches in diameter at the small end:

- At the end of 30 years . . . 6,700 feet b.m. or 11 cords per acre.
- At the end of 40 years . . . 21,600 feet b.m. or 35 cords per acre.
- At the end of 50 years . . . 36,700 feet b.m. or 61 cords per acre.
- At the end of 60 years . . . 50,600 feet b.m. or 85 cords per acre.

In admitting that these figures could not yet be obtained in this Province, we can, by reducing them, say by one-third, arrive at good conclusions: as after 20 years the stand would furnish 7 cords per acre.



This European larch is 10 years old, 3" diameter, and 12' high—the tall man is 6' 2". This tree is quite immune to ordinary insect enemies.

- as after 40 years the stand would furnish 20 cords per acre.
- as after 50 years the stand would furnish 36 cords per acre.
- as after 60 years the stand would furnish 50 cords per acre.

Those who have had the chance to see the national forests of France and Germany will admit with me that these figures are not exaggerated, because every spot of these forests is devoted entirely to the production of trees, and of good trees, whereas in this country the good trees will only form, too often, an insignificant proportion of the stand, the remainder being occupied by swamps, inferior species or blanks.

It would be therefore of capital importance for the future operators to be assured that instead of culling as we do now from four to ten cords per acre, they could find from twenty-five to fifty cords after an interval of thirty to fifty years. I need not emphasize the effect that such a yield per acre would have on the cost price of lumber; and also on the value of the forest property.

#### Who Must Do the Reforestation?

Owing to the fact that no practical returns can be expected before at least thirty years after the plantation, it requires therefore continuity or almost permanency in the possession of the property to be reforested. The problem is easily solved as regards the



A group of notables waiting at Berthier Junction—reading from the left—P. G. Owen, secretary of nearly everything in the forest protection line in Quebec; W. G. Power, past chairman of the Woodlands Section; "Bob" Kernan, present chairman; J. M. Swaine, Dominion Entomologist.

private lands; it will be a sound and profitable investment for the farmer, the towns and the corporations owing some private lands not fit for cultivation to go into this business, as they will do a national work and also create an excellent and steady source of revenue for themselves.

But when we come to the question of reforesting the timberlands leased from the Government the problem is more complex. Though I have studied it for a long while, I have not yet come to a satisfactory conclusion. Will it be better for the Government to do this work exclusively or should they rather allow or compel the limit holder to do it for and by himself, or should both co-operate in the plantation? The latter alternative may be the more logical since the Government owns the soil and keeps the title of the property and might therefore furnish all the planting material required, and also the technical direction to do the work, whereas the limit holder would defray the expenses of replanting.

Someone has raised the important question: "Would the limit holder continue to pay the ground rent on the parts of his limits that have been reforested?" I think he should continue to do so, if he wants to retain his lease, but I believe that his share of expense,

that is the cost of planting, should be kept separate and returned to him as a deduction on the stumpage charges either at the moment of the plantation or with the accrued interest of say three or four per cent, when the trees planted will have reached maturity. This plan is not altogether satisfactory to me, and I just present it as a basis for discussion rather than as a remedy to the difficulty. (There was not time for a discussion of this point at the meeting, but the columns of the Pulp and Paper Magazine are open to those who have opinions to express. An airing of ideas would help solve the problem.—Ed.)

#### Measures to Encourage and Promote Reforestation.

The first measure to adopt for the welfare of the plantations is unquestionably to give them a satisfactory protection against fires. It would be ridiculous to make a plantation on a tract that would not be easily reached and defended against forest fires. We must carry on further the policy of protection against forest fires: we have already done a good deal in that direction, but we find that much of our forests is still running away in smoke, and this spring we have had several big fires in the Lake St. John and the St. Maurice districts; most of them being caused directly by the railways. Nobody can dispute that fact, as we have secured complete evidence in each case establishing that the railway engines have been the cause of two large fires, one at Vandry and the other at Timbrell, on the Transcontinental Railway. I firmly believe that we cannot allow our forest wealth to be depleted in such a manner, and the time has come to see that each engine travelling through a forested district will burn something else than coal or wood. We have water powers in abundance, and we should study the electrification of the railways in the forested regions. Someone will say that this may be too expensive, but it will be less expensive than the burning of fifty square miles of timber limits per year, and, besides, we will be thereby developing our natural resources and diminishing at the same time our dependency upon our neighbors for coal. If we cannot electrify the locomotives, we could have them burn oil, as is done in the Adirondacks, and as it was done with success by the contractors who built the La Loure Dam. Anyhow, the railways will have to burn something else than coal or wood, and I hope the Pulp and Paper Association will support any movement in this direction.

Many fires may be attributed to the poachers, the fishermen and hunters. Nobody should be allowed to roam at will in the forest. We should make it a close property and oblige everyone to have a permit before entering in same.

More organization should be made. It is much easier to prevent an ill than to cure it, and this is especially true of forest fires. We should have more patrols, telephone lines connecting all depots and observatory towers, etc.

To facilitate the work of the hydroplane service which is being inaugurated, we should establish in connection with the Geodetic Survey more lookout stations.

Much has been done by the different Protective Associations which are doing splendidly, but we must complete our protective service so that the fire danger will be eliminated totally; and then we can safely plant, but not before.

In regard to private lands, an important point is that of the taxes. The valuation of the properties

reforested should not be modified just after trees have been set. A law should be enacted, as early as possible, to protect the citizens who have the courage to do reforestation against the unjust raising of the land valuation, and thereby of their taxes. I hold that, for at least thirty years, the first valuation of the land planted should not be modified; the appraisal could take place to determine then the actual value of the forest crop separately from that of the soil, and this valuation should stand for one decade at least. The ideal would be to repeat these appraisals at each interval of ten years after the first period has elapsed.

I think the time has come for the Government to exercise a full control over the wood working establishments in this Province, as we find too often saw-mills being located in a locality where there is not enough wood to justify their appearance. Naturally



Smiling, in spite of the rain, F. A. Sabbaton, shows how spruce grows on forest land at Grand'Mere. A neighboring tree made a growth of 30" this year—John Stadler measured it.

the mill owner, to obtain his raw material, must get it at the expense of the adjoining limits, and this is the beginning of the timber speculation of which we have suffered so much. All the wood working establishments in the province should be licensed and compelled each year to obtain a permit to operate. The Government will then be in position to determine if they have enough timber lands to justify their operating, and to prevent enlargements when there is no supply of materials in sight.

Up to the present we have found the lumbermen of this Province ready to co-operate heartily with the Government in all the reforms made by the administration. Our Province can boast with justice of having made great progress through this co-operation. Now that the lumber industry in this Province is in a rather stable state of equilibrium we can look ahead and adopt a definite policy of reforestation and of management of our forests. We should cause

those who waste their forest through bad lumbering to replant their holdings at their own expense, while those who have done all what they could should be helped to the fullest extent. We should endeavor to make every acre of waste land and of timber land to produce the fullest quantity of timber possible. We can make this Province the largest timber producer in the world, not only in lumber, but also and especially in pulp and paper products, and I am sure that with the spirit, the energy and the co-operation of all we will undoubtedly realize our ambition.

(Except for the picture of Mr. Sabbaton, the illustrations were taken at the Nurseries. The British & Colonial Press, Montreal, also have a group picture taken at Laurentide Inn, the measurement of a 30" growth of white spruce, Hon. Jules Allard, and others).

#### FINANCIAL INTERESTS BEHIND WHALEN CO.

As was expected at the time of his election, the appointment of Sir George Bury as President and Chief Executive of the Whalen Pulp & Paper Mills, Limited, Vancouver, has been followed by other changes in the Company's Board.

At a meeting of the Board of Directors recently held in Montreal, there were newly elected to the Board, Mr. I. W. Killam, President of Royal Securities Corporation, Ltd., Mr. W. N. Hurlbut, of the Geo. H. Mead Co. of Dayton, Ohio, and Mr. Alexander Smith, President of Peabody, Honteling & Co., of Chicago.

M. N. Hurlbut was associated for many years with the Backus paper interests, and more lately with the Spanish River Pulp & Paper Company. The Mead organization, of which Mr. Hurlbut is an executive head, has established an excellent reputation in Canada by its very able management of the Spanish River Pulp and Paper Company and its subsidiaries.

Alexander Smith has won an excellent reputation in Canadian industrial circles through the successful handling of the financing and organization of the Abitibi Power & Paper Company, Limited.

I. W. Killam, as President of Royal Securities Corporation, is chief executive of an organization which has to its credit in former years the financing of such companies as Canada Cement Company and Steel Company of Canada, and which has been of late prominently identified with Canadian pulp and paper financing on a large scale, and the initial financing of such companies as Price Bros. & Co., Abitibi Power & Paper Co., Brompton Pulp and Paper Co., Fraser Companies, Limited, and many others.

It is felt that the new appointments to the Whalen Board will give the Company the benefit of the successful experience and financial backing of the strongest interests in the Canadian pulp and paper field.

In connection with the changes in the Whalen Board, it is believed that negotiations are practically completed for financing to put the Whalen Company in a position to develop most extensively the successful export business which the company has carried on for many years to the Orient, and will further place the company in a position of having over a million dollars of net liquid assets (working capital) establishing it in a very strong position with regard to the handling of its already established business and the development of other fields.

## Errors in Testing Pulp

At a meeting of the Edinburgh Section of the Society of Chemical Industry on March 11, James Strachan, analytical and advising chemist to the Donside Paper Company, Aberdeen, read a paper on the origin of errors in the testing of woodpulp for air-dry content, of which the following abstract is quoted from World's Paper Trade Review:

The introductory portion of this paper dealt with previous contributions to the subject of woodpulp testing, including the important papers by Lester in England, and Little in America. Sindall has dealt with the measurement of probable errors in a mathematical interpretation of results, but the object of the present paper is to indicate the probable origin of such errors.

The adoption of official methods of sampling, recognized by both pulpmakers and pulp users, has not led to the uniformity of results expected and the degree of accuracy attained in pulp tests is largely a matter of personal skill on the part of the chemist.

Errors may be attributed to two main causes. First, variations in distribution of moisture, and second, variations in conditions of testing.

Shortages of pulp involve errors on the part of the testing department in pulp mills, and their chief cause, in the author's experience, is inefficient methods of drying the samples. This frequently arises from a desire for efficiency, in the testing of too many samples, with the result that the time of drying allocated to each sample is limited by production. When the pulp comes along damp production is increased, and when under these conditions, longer time is necessary to dry the samples, the time available is really shorter. Remedies for overcoming such occurrences are suggested.

Specific errors in carrying out pulp tests are divided into three sections.

(1) **Errors in Selection of Bales**—Shortages chiefly occur in irregular pulp and the accuracy of tests depends on proper selection of the bales. Examples are given of mistakes made in methods of selection, and the errors arising in consequence. Serious errors frequently arise in selecting bales from pulp which has been exposed to atmospheric influences. This is shown by references to tests made on such parcels before and after exposure, and the source of error is indicated.

(2) **Errors in Drawing Samples**—The author gives his opinion based on experience of various methods of sampling. Errors in this department arise more from lack of judgment than transgression of the mathematical theory of sampling.

Samples are cut to equal size in all official methods, but in irregular pulps, which are the chief cause of shortages, it is frequently necessary to vary the size of samples in individual bales.

The theory of pulp sampling as laid down by Lester, Griffin and Sindall is discussed from this point of view and the mathematical basis for varying the size of sample shown by examples from actual practice.

(3) **Errors in Moisture Estimation**—The chief errors occurring here are rather surprising and are due chiefly to bad design of drying ovens. A standard oven is almost as great a necessity as a standard method of sampling.

Examples are given of errors arising from under-drying in various types of ovens and the origin of these errors.

The question of temperature of drying is very fully

gone into and a resume given of the conflicting opinions of chemists in Europe and America on this subject. The error arising from drying at 100° Cent. until weight is constant may be quite appreciable and sometimes very large in badly designed ovens. Working with commercial test-ovens on samples weighing 1 to 2 kilos, it is essential to dry at a higher temperature than 100° Cent. to get accurate results. Reasons for this are fully indicated.

### SAFEGUARDING THE BUYER OF SAFEGUARDS.

Many employers have been grievously disappointed when machine guards, goggles, or other protective devices, purchased at considerable expense, have failed to yield the expected results. Such an experience is always discouraging, and sometimes prevents further progress in safety work.

If a safeguard fails to give satisfaction, the reason may be:

- (1) Because the device is improperly designed or constructed, or
- (2) Because the device is not suitable for the particular use to which it is put, although suitable for other uses, or
- (3) Because the foreman or workman is either unwilling or does not understand how to use the device.

The third of these can be overcome by explanation and discipline. Here the experience of other employers is often helpful.

The second of these causes means that a mistake was made in buying a safeguard not suited to the work. Guards for saws, power presses and other machines are often satisfactory for one type of operation but not for others. The experience of other Council members will often be helpful on this point also.

The first point mentioned above is often difficult for the average employer to detect. Machine guards, goggles, shoes, or other safeguards may be made of improper material or may be so designed that they will not furnish the needed protection—and such defects may be quite invisible to the purchaser, who can make only a superficial examination. To test safety devices properly requires special apparatus and men experienced in this work.

Underwriters' Laboratories, Chicago, whose label on fire protective and fire fighting equipment is known throughout the country, has since 1916 been giving a similar inspection and label service for accident prevention equipment. The Laboratories are organized and maintained for the purpose of drawing up standard specifications for inspecting, testing and labeling protective devices, and the fair and impartial character of their decisions is guaranteed by the right of appeal to the U. S. Bureau of Standards. The label of Underwriters' Laboratories means that, in the opinion of the Laboratories, backed up by a board of consulting experts, the device is properly designated and constructed to perform the service for which it has been approved.

The purchaser must still, of course, determine whether such device is suitable for the particular work which he desires to protect — and must then see that the device is properly used.—National Safety Council.

Sadler & Haworth, belting manufacturers have issued an attractive leaflet with appropriate sentiments in verse and prose, commemorating the coming of Peace.

**WOOD PULP REVIEW FOR MAY.**

In connection with the Federal Trade Commission's current statistics on the paper industry, a summary of the monthly reports required from manufacturers of wood pulp and other kinds of pulp used in paper making is issued. The table shows the kind of pulp, the stocks and production for the month. Loss of production is shown by giving the idle machine time reported by each company for each kind of pulp.

The following is a tabulation of the production, pulp used by the company producing it, shipments to outside concerns, and stocks of finished pulp, in tons of 2,000 pounds on an air dry basis for May, 1919, for the operating mills.

**Finished Pulp—Tons—Air Dry Basis.**

Kind of Pulp	Number of mills	On hand first of month	Produced ton for month	On hand end of month
Groundwood pulp	162	175,026	144,146	192,351
Sulphite, news grade	62	28,346	52,740	26,433
Sulphite, bleached	31	16,320	39,994	16,452
Sulphite, each bleaching	8	2,930	6,421	2,919
Sulphite, Mitscherlich	7	2,450	6,363	2,278
Sulphate pulp	22	7,091	12,848	8,487
Soda pulp	28	9,620	30,539	9,033
Other than wood pulp	7	65	1,016	98

Total for all grades . . . 241,848 294,067 258,051  
 Average . . . . . 269,412 173,868

Total stocks of all grades of pulp in the mills on May 31 amounted to 258,051 tons. Stocks of news grade sulphite, easy bleaching sulphite, Mitscherlich sulphite and soda pulp decreased during the month. There was an increase during the month in the stocks of groundwood, bleached sulphite, sulphate and "other than wood pulp."

Comparing the stocks on hand at the domestic pulp mills at the end of the month with their average daily production based on the 9-months' period ended April 30, 1919, the figures show that:

Groundwood mill stocks equal slightly less than 44 days' average output.

News grade sulphite mill stocks equal slightly less than 12 days' average output.

Bleached sulphite mill stocks equal slightly less than 11 days' average output.

Easy bleaching sulphite mill stocks equal slightly more than 11 days' average output.

Mitscherlich sulphite mill stocks equal slightly more than 9 days' average output.

Sulphate mill stocks equal slightly less than 18 days' average output.

Soda pulp mill stocks equal slightly more than 8 days' average output.

Mill stocks of "other than wood pulp" equal slightly less than 3 days' average output.

Total mill stocks of all grades equal slightly less than 25 days' average output.

**Loss of Production.**

The number of grinders and digesters showing lost time during the month of May in operating mills was 1,106. These figures do not include the machines

in three mills that were not in operation during May on account of lack of labor, lack of orders, repairs and other reasons, chiefly lack of material and water conditions. The total number of hours lost for these reasons was, respectively, 45,130; 24,244; 63,375 and 96,108, a total of 22,857, as compared with 168,741 in April.

Total hours lost in May, by classes of product:—Groundwood pulp, 163,574; sulphite, news grade, 31,170; sulphite, bleached, 6,443; sulphite, easy bleaching, 917; sulphite, Mitscherlich, 3,220; sulphate pulp, 6,744; soda pulp, 14,741, and other than wood pulp, 2,048.

Groundwood mills lost 37,434 hours for lack of labor, 3,024 for lack of orders, 50,204 for repairs, and 72,913, which includes 40,867 hours, due to low water and other water conditions, for other reasons.

**CONSTRUCTION NEWS.**

Ha! Ha! Bay will present a greatly improved appearance with the new \$400,000 concrete wharf for which the contract has been awarded to the J. T. White Engineering Co. It is also understood that 50 new residences are to be built for La Societe de Construction Ouvriere, Chicoutimi.

Announcement was made in this magazine some time ago that a sulphate pulp mill would be built at Bear River, N.S., by Clarke Bros. A block of the new securities of this company was recently offered the public and it is reported that work has already begun on the pulp mill, sawmill, machine shop, etc. The company is already a large manufacturer of lumber products.

The Beaver Wood Fibre announces that their Engineering Department has plans under way for the expenditure of two and one-half millions of dollars between now and February 1st, in the expansion of the Thorold plant and in building a duplicate of the Ottawa plant to take care of increased Canadian and export business.

Considerable interest is aroused by the advertisement which appears on another page, stating that sealed tenders will be received up to and including July 20 for the building of a 150-ton pulp and paper mill at Donnacona, Que., and also for a fully equipped power plant, to develop 5,000 horsepower, on Jaques Cartier River. Plans are on view in Toronto. (See page 568.)

**A NEAR-FATAL FALL.**

An accident occurred Saturday, June 28, at the Ontario paper-mill, which might well have terminated a most promising young life. It seems that George Sinnett, jr., employed in the office of the company, climbed up to see a man who was working on repairs to the roof, as nearly as can be learned on an errand of his own. Just how it happened no one knows, for he was unobserved until found below unconscious, having fallen about forty feet. His head was injured, and one arm broken. He was rushed to the hospital, where he is receiving every care. An X-ray examination is being made to determine the extent of his injury.

**TRAINS TO MURRAY BAY.**

The first regular daily train service over the new line of the Quebec and Saguenay will be inaugurated on July 14 next. The trains will run daily as far as Murray Bay.



## British Trade News

(From Our London Correspondent.)

London, June 30, 1919.

After an absence of nearly five years in France and Belgium I have returned to renew my acquaintance, through the "Pulp & Paper Magazine," with the paper and pulp men of Canada. As a preliminary set-off I would advise all business men in the Dominion to study the few words which Edward Lloyd, one of the keenest and most level-headed men in London to-day, addressed to a meeting of his company. His words sum up the facts that the British mill-owner will have to face in the near future. Before the war paper mill owners in Canada contended that they received a better price for their mill products across the border in the States than they could ever realize in the English market. Some of them told me that the cost of freightage was against them and there was less trouble in shipping to their neighbors. One of the reasons why a low price was offered in the English market was the enormous importation of German paper and Norwegian newsprint. What is the position to-day? Germany is out of the market, and will be for a long time to come. Norwegian mills are running to keep up stocks and half are closed down of the total in the country and paper buyers are looking to Canada, in fact, some of them have crossed to see if they cannot make regular connections. That is how matters stand to-day! Throughout the United Kingdom newspapers have been and are increasing in size—in other words they are going back to their pre-war days. Censorship is abolished and curtailment of paper is at an end, so that in the big printing houses and in all the newspaper offices the cry is "more paper" and it must be found.

### Canada's Fine Chance.

There is also a stronger desire now to deal with Canada in paper and pulp than in 1914. Up to 1914 Canadian trade with the United Kingdom in pulp and newsprint was gradually going up and it is to be hoped that out of the great demand that is sure to spring up here in the near future Canadians will lose no time in booking contracts. Paper mills in the United Kingdom are in a poor way of working at present owing to the coal trouble and the labor questions and the outlook is not promising, particularly when one studies the cost of production and raw materials. But there is bound to be an awakening in the industry and then the Canadian pulp manufacturer will have to be ready to show his hand in chemical pulps. The market is in a position now for pulp makers in Canada to give it some attention. If there are government barriers to impede the importation of pulps into England—and there are a few I know of—they must be tackled at once because of the leniency of the Government to-day in anything that is Canadian. It is an opportunity that must not be lost and pulp and paper men must assert themselves with the same vigor as the labor party has exercised in Canada and England in calling for their improved conditions. Germany is out of the market, Norway is dormant and there is a demand creeping along gradually which must not be lost sight of. The war also killed several papers in the United Kingdom. Every week one sees a new one springing up since February and the outlook is very rosy from a paper mill and pulp mill point of view.

### Position of British Paper Mills.

The market for pulp is not so very satisfactory and it cannot be expected to be so considering the vicissitudes of the paper industry. Importations are, however, slightly increasing and everything augurs well for the near future. Wet mechanical pulp received greater attention during the past two months than chemical and there were considerable enquiries and buying in a small way. The Norwegians who have always largely shared with Sweden the English trade with Scandinavia, are experiencing difficulty with freightage and of course shipping is scarce with them. Prices consequently in Scandinavia depend on the freight question.

With every prospect of the British paper industry showing activity within the next couple of months, the British pulp market requires careful studying. Paper mills are being licked into their pre-war shape and with the demobilization of the army labor is slowly finding its way back to them, so that buyers of pulp will shortly begin to look round for new contracts.

Norway is at present doing most of the trade with England and Scotland. Good quality sulphite is £36 10s to £37 15s; news grade sulphite £23 to £24 10s f.o.b., and wet pulp £8 to £8 5s.

I am told that during the recent military operations in Russia many of the large forests were destroyed by fire. If this is so the pulp market in the future will not receive much assistance from Russians.

### Chemical Trade Distressed.

Turning to the chemical industry, there is no need for me to mince matters about it, as the whole trade of the country is doing badly. One sees on every side a want of confidence and stocks are accumulating and manufacturers are lying low to see what policy the Government will take up when the Peace Conference finishes up with the Germans. There is, however, a good time in store for the chemical industry and it is feared that the demand will considerably exceed the supply on the export side. As regards dyestuffs, the Government are now undertaking the purchase of foreign dyestuffs on behalf of consumers, but this course has not given satisfaction to legitimate traders, who experienced the greatest difficulty in carrying on during the past 5 years.

Ammonia Alkali is exchanging hands at £6 5s to £6 7s 6d per ton, free on rail at works, and Bleaching Powder is quoted lower than it was two weeks ago, export standing at £16 5s to £18 per ton. Caustic Soda has been in demand lately and prices have become firm, 70 to 72 per cent. ranges up to £22 per ton, 76 per cent. about £24 5s and 60 to 62 per cent. £19 to £20 per ton. Alum for export is £19 to £19 10s per ton. From an interview I have had with one or two fairly large chemical manufacturers, I gathered that as soon as things got on the turn there would be a rush for chemicals and prices may rise as a consequence.

### Edward Lloyd's Advice.

I was present at the 29th annual meeting of Edward Lloyd, Limited, and the President of the Company (Mr. Edward Lloyd) stated that the dividend to be paid was at the rate of 11¼ per cent. on the ordinary shares—the same as in 1918—and they proposed to carry forward £52,690. The profits for the years show an increase of £26,404 over 1917 and £25,578 more than those of 1913. The increased profit on

pre-war results represented 64 per cent. on additional capital employed in the business, which amounted to £400,000.

Dealing with the company's interests in Norway, Mr. Lloyd mentioned that owing to the growing value of water power for the generation of electricity, and to the low rate of exchange prevailing with Norway in 1918, the company was able to dispose of the property at Honefos on very favorable terms and the proceeds of the sale had been invested in British War Bonds, which would leave the money available for further developments in other directions when a favorable opportunity occurred. As in the case of the sale of the Vittingfos property in 1916, they had retained a 14 years lease of the Honefos pulp mill so that they might be able to rely on a continued supply of high-class pulp for some years to come.

Mr. Lloyd has always been a great advocate of the 3-shift system in mills and he had something to say on the subject. Meetings have taken place between the employers and employees of the paper-making industry, he remarked, and the 3-shift system appeared to him to be the only means whereby the higher remuneration of labor in paper mills could be permanently maintained without sacrificing the interests of the consumers. He gladly welcomed the new order and trusted it would bring to the workers a high standard of living. This, of course, would greatly increase the cost of production and it was obvious that unless a large part of the increased cost could be counter-balanced by a larger production and great efficiency, nobody would be any better off than before. It was, therefore, up to the captains of industry, no less than to their lieutenants, to re-examine every item in their cost of production and transport, with a view to the introduction of still more scientific methods into every department of manufacture and into the handling of raw materials and of the finished product. To make such measures fully effective it was absolutely necessary for the employees to co-operate with the employers in attaining the utmost economy and efficiency.

**From Cannon to Calenders.**

The war having helped to put an end to some of the ramifications of Krupp, of Essen, it is now reported in London that the old firm of gun makers have decided to give up the idea of producing any more artillery pieces and will devote attention to the production of papermaking machinery. The news comes from neutral sources and it is stated that Krupp's for their purpose have acquired from the firm of Karl Schuermann, of Dusseldorf, all rights for the manufacture of all kinds of machines required in the paper industry. The new move on Krupp's part will, of course, take up only a small portion of their works. They are compelled to do something in this way with the British troops at their door, and the next great question to be considered is the market. So far as France and England are concerned the Germans will not have a look in for some years to come and I would advise Canadian makers of machinery to keep a close eye on the British market as things will begin to move now that peace has become a matter of history.

**Some British Dividends.**

Messrs. Waterlow and Sons, who are extensive printers in London and big consumers of papers of all kinds, are paying an interim dividend of 2½ per cent. on the deferred ordinary shares, as compared with 5 per cent. last year. The Sun Paper Mill Co., Ltd., of

Feniseowles, are paying an interim dividend at the rate of 15 per cent. and are adding 2s 6d per share bonus for the half year ended May last. Brunner, Mond & Co., Ltd., the well-known chemical producers, in their report for the year ending March last, state that the balance at credit of profit and loss on the year's working is £1,012,081. The total amount now carried forward is £1,129,151. It is proposed to increase the nominal capital of the company from £10,000,000 to £15,000,000. Sir Alfred Mond is still giving his services to the government in the public works department, which controls government buildings and the housing of staffs, etc.

**THEY SELL MORE THAN THEY BUY.**

A letter recently received from the Bureau of Commerce and Industry at Manila, indicates that the Philippine Islands are in the fortunate condition of exporting more than they import. The letter states that the population of these islands is approximately eleven million, nearly 50 per cent greater than the population of Canada, and that total exports, which is an index of the buying power, is more than 270 million pesos, while the importations amount to 197 million pesos (a peso equals 50c. American money.)

The most important of the imports as far as Canada is concerned with the value in pesos for 1918 were as follows:

Cotton and its manufacture . . . . .	58,016,844
Iron and steel and their manufacture . . . . .	24,507,970
Wheat flour . . . . .	6,033,528
Fish and fish products . . . . .	5,212,350
Fibers, vegetable and textile . . . . .	4,724,325
Paper and its manufactures . . . . .	4,171,064
Chemicals, drugs, dyes and medicines . . . . .	3,341,434
Wood and manufactures of . . . . .	1,772,346
Books and other printed matter . . . . .	1,211,292

None of the exports are immediately of interest to the pulp and paper industry, but they contribute to other industries, which furnish the paper mill with some of its raw materials. The following will be of interest:

Hemp . . . . .	116,383,100
Cordage . . . . .	1,733,968
Knotted hemp . . . . .	1,578,869

**NO AEROPLANES YET FOR PRIVATE CONTROL.**

The Bathurst Lumber Co., Limited, of Bathurst, N.B., say that they have not, as reported, made any arrangements for patrolling their forests by aeroplanes. They do not consider this subject has been properly worked out as yet. They believe that during the experimental stages the matter will have to be handled in some way under Government patronage. With respect to the demand for sulphite and sulphate pulp, the company declare that it is improving rapidly and prospects are that the trade will soon be back again good and strong, as at present nearly all the paper mills in Canada and United States are quite active and are in the market for raw material.

The Kyro Rivers Improvement Co. of Port Arthur, Ont., is making good progress with their contract for 8,000 cords of pulpwood for the Detroit Sulphite Fibre Co. The first shipment was made May 20 and the last one, consisting of 1,900 cords taken by the steamer Green and two barges, brings the total shipped to the present to 5,000 cords.

## Hydrated Fibre for Papermaking

In practice the mercerising process consists in applying an aqueous solution of caustic soda of 15 to 17.5 per cent. NaHO at ordinary temperatures. The effect is rapid, and it may be said that at strengths caustic soda is diminished below 15 per cent; with lyes of 12.5 per cent. to 10.5 per cent. the diminution effect is rapid, and it may be said that at strengths below 12.5 per cent. caustic soda solution has no substantial mercerising effect. Thus cotton or cotton fabric treated with an alkali lye of 9 per cent caustic soda is not sensibly affected in the direction of mercerisation.

For the production of alkali-cellulose in the synthesis of water soluble cellulose derivatives (by subsequent action of carbon disulphide) as described in the Cross and Bevan Specification No. 8700 of 1892, it is known that the cellulose must be taken to the stage of full mercerisation and therefore the fibrous cellulose must be treated with a lye containing the equivalent of upwards of 15.0 per cent. Alkali-cellulose for industrial production of viscose, which implies complete conversion to water soluble derivatives in the subsequent reaction, is prepared by treating air-dry cellulose with caustic soda lye of 17 per cent. and pressing the product so that the fibrous mass retains lye amounting to three times the weight of the cellulose, inclusive of absorbed alkali. On the other hand, when a less concentrated lye is used the formation of soluble derivatives on subsequent or simultaneous treatment with carbon disulphide is increasingly imperfect. Thus when cotton or other cellulose is uniformly impregnated with lye of 9 per cent. in the proportion of twice the weight of the fibre, and then exposed to carbon disulphide, only a small fraction of the material is converted into water soluble derivatives.

The attendant formation of water insoluble xanthates is also fractional in amount. But, as Cross and Bevan have now discovered and patented (26,174) fundamental reaction occurs, and the cellulose is profoundly modified. The new characteristics are evidenced in further reaction with water; structural changes in the fibre are developed, with large increase of diameter, and thickening of the cell wall, and in the mass there are visible effects of hydration. The fibrous mass swells considerably, and retains a very much increased percentage of water, after having been pressed or centrifuged. The fibres, however, though much distended, remain free, and may be readily and quickly washed free from excess of alkali, and the small proportion of soluble cellulose compounds. For subsequent removal of residual alkali and decomposition of fractional residues of water insoluble xanthates, a treatment with dilute acid may be desirable.

It is this fully hydrated condition of the cellulose and the implied corresponding plasticity of the substance, which gives rise to the novel technical results of the present invention, which consists in modifying the cellulose for subsequent full hydration by treatment of the cellulose with alkali lye of a strength between 6 and 11 per cent. and simultaneously or subsequently, with carbon disulphide.

As an example of the treatment, raw cotton fibre may be impregnated with twice its weight of caustic soda, or 9 per cent. strength and introduced a closed

chamber together with carbon disulphide amounting to say 15 per cent. of the weight of the original fibre. After a period of six to ten hours, at the ordinary temperature, the mass is transferred to a convenient apparatus, in which the product is now washed with water at ordinary temperature for removal and recovery of alkali and to determine or develop the effects of hydration.

The structural modifications produced in the cotton fibre and the changes accompanying the swelling of the fibre generally resemble those produced by saline solvents of cellulose in the earlier stages of action, that is mainly in the thickening by swelling of the cell wall. A more special effect is the exaggeration of the central canal defined by symmetrical sinusoidal outlines. In extreme treatment a definite continuous spiral appears in the mass of swollen fibre substance. This development of the ultimate spiral differentiations of the external tissues of the cotton is more marked if the preparatory treatment with alkali is carried out at a higher temperature, say 80 to 90 C.

The hydration effects are enhanced by increasing the proportion of alkali to fibre in the first stage of treatment, for instance by using an amount of caustic soda solution equal to 2.5 or 3.0 times the weight of the fibre. The effects may also be controlled by varying the temperature of the alkali solution, the action of the latter in determining hydration effects being greater the lower the temperature; on the other hand, raising the temperature alters the structural characteristics of the hydrated product, and particularly in the sense that when formed into a mass or in sheets and subjected to pressure it yields a parchment-like material.

The finally reverted air dry product generally retains 10 to 11 per cent. of moisture as compared with the 6 to 7 per cent. normal to the raw cotton fibre which is correlative with a general increased dyeing capacity.

Instead of washing with water the material which has been attacked by carbon disulphide, it may be washed with a strong solution of a neutral alkali salt, for instance brine, to remove excess of alkali; the hydration effect is thus suspended and can be subsequently produced by treatment with water. This brine treatment is useful in connection with the recovery of the alkali, which is thereby obtained in more concentrated state, as it is in furnishing a product which can be subsequently hydrated by washing away the brine.

For the purposes of this invention the term "fibrous cellulose" includes the well-known industrial forms of cellulose—cotton, flax, hemp, esparto, wood-cellulose, etc. Also, raw cottons which contain only small proportions of alkali soluble constituents; otherwise, as in the case of flax, it is advantageous to operate on the alkali-scoured material; also papermakers' half stuff, or pulps in the bleached or unbleached state, in which they retain residues of non-cellulose components.

The invention may also be applied to compound celluloses of the type of jute fibre, in treating which the upper limit of concentration of the alkali used in the preliminary treatment is required.

In regard to the technical uses of the product it is to be noted that the hydration effects gives the necessary paper making quality, and are independent,

tion; or, of any hydration effects such as produced in the ordinary Hollander or beater. Therefore, also fibrous cellulose of any length of fibre may be brought into the state necessary for wet manipulation with conservation of length. Hence, fine felted sheets say of 15 grammes per square metre of area can be produced, showing considerable adhesion in the final reverted state.

The hydrated fibre in admixture with ordinary paper making cellulose, that is, as is mixed fibre, produces its proportionate effect, and it is characteristic of the reversion that in the final form the fibre retains elasticity and bulk. — Paper Making.

#### PROVISIONS OF THE NEWSPRINT ACT.

The clauses of the Act, which is referred to on the editorial page of this issue (after the enacting clause) are as follows:

1. The powers, jurisdiction and authority of the Commissioner and Controller of Paper are hereby confirmed and extended to such an extent as may be necessary to enable said Commissioner and Controller to fully complete all work and investigations begun by him under the provisions of the Order in Council of April 16th, 1917 (P.S. 1059), the Order in Council of April 16th, 1917 (P.C. 1060), the Order in Council of April 21st, 1917 (P.C. 1109), and the Order in Council of November 3rd, 1917 (P.C. 3122) prior to the declaration of peace, and to determine all questions and to make all necessary orders with respect to matters begun by or coming before him prior to the declaration of peace.

2. The powers, jurisdiction and authority of the Paper Control Tribunal under the Order in Council of September 16th, 1918 (P.C. 2270), are hereby confirmed and extended to such extent as may be necessary to enable such Paper Control Tribunal to finally determine after the declaration of peace all matters pending before and not finally determined by it upon the date of such declaration; and the powers, jurisdiction and authority of said Tribunal are further extended to such extent as may be necessary to enable it to hear and finally determine all matters and questions brought before it subsequent to the declaration of peace on appeal from any act done by or order or decision of the Commissioner and Controller under the provisions of section one of this Act.

3. Except for the purpose of finally completing all matters undertaken and determining all questions arising prior to the declaration of peace, the powers, authority and jurisdiction of said Commissioner and Controller of Paper and of said Paper Control Tribunal shall cease upon the declaration of Peace.

#### LARGE SULPHITE AND GROUNDWOOD MILL PROPOSED.

The Pulp & Paper Magazine is advised that a temporary office has been opened at Room 4, 163½ Church St., Toronto, Ont., by Arthur Sande, an engineer who is interested in the location and erection of a pulp mill for groundwood and sulphite pulp, which would produce 500 tons daily.

Mr. Sande is said to be representing Chicago interests with unlimited funds, and that he is at present in touch with the owners of large timber limits in Quebec. It is understood that, if arrangements proceed satisfactorily, construction will be started at once.

#### JAPANESE PAPER ON A YANKEE MACHINE.

Referring to conditions in Japan from which interesting country he has just returned, Mr. F. N. Huyck writes: Capt. James L. Braman, secretary of our company, and I went to Japan to meet the paper manufacturers, with whom we have been doing business for twenty-five years. We visited a good many of the large plants and met officers and directors of most of the important paper manufacturing concerns.

The Japanese paper industry has grown very rapidly and several new paper machines were being installed while we were there. Business was dull just then because of large amounts of paper imported during the war and a temporary falling off in paper buying. I was told at that time immediate orders were consuming about 60 per cent. of the production of the mills. Since our return I have received word that business is improving quite rapidly.

We were much interested in a paper which is called Japanese paper, manufactured in large quantities on Yankee machines and used as cheap writing paper and for various other purposes. It could not be used with a pen or pencil but is adapted to the use of the Japanese brush, with which most of the writing is done.

We saw many kinds of paper being manufactured and believe at the present time Japanese paper mills are equipped to make all qualities — from the lightest tissues to the heaviest boards. The consumption of paper in Japan is increasing very steadily and while the present installation of machines may make a temporary over-production, the paper manufacturers do not feel that this will be more than temporary as they believe the increased consumption will rapidly take the whole production of all qualities.

It is understood that plans are developing in a very satisfactory way for F. C. Huyck factory at Arnprior, Ont., where paper makers' felts and jackets will be made in the near future. Canadian business in this line is growing.

#### SAFETY SUGGESTIONS.

1. When approaching tracks look to the right and left before crossing.

2. When entering a dark place to repair, inspect, or oil machinery, turn on a light or take a lantern with you.

3. Don't throw boards on the ground with the nails pointing upward. Such boards should always be promptly removed and safely disposed of.

4. Never work on a log, raft or boat in front of the dam when any gate is opened. Only those who have been drawn into the swift and powerful current know how dangerous this is and how easily and quickly a serious accident can occur.

5. Be careful about piling pulp for storage and especially when loading it on trucks. A serious accident occurred this summer when a truckload of pulp fell on a workman, breaking one of his legs in two places, because the pulp did not contain the right kind of "binders" and not enough of them.

6. When opening high pressure steam valves, do it slowly to prevent a sudden strain or hammer on fittings.

7. When starting machinery always give a loud alarm if the entire machine is not plainly visible to you.

8. Don't fail to wear your goggles where needed.

## Australian Paper Making

Because of the importance of Australia as a market for Canadian paper, the progress of attempts to make pulp from their own forests is of interest to Canadian producers. The following article from "The Times Trade Supplement" is a good review of what has been accomplished, and what is likely to be the lines of future progress.

Practically the whole of the paper used in Australia at present is imported, and a considerable number of investigations and inquiries have been made with a view to finding some suitable raw material in Australia from which paper can be manufactured in large quantities. The importance of this matter and the possibilities of establishing the industry in Australia can be gauged by the fact that the annual imports of paper into Australia are valued at no less than £1,800,000.

The whole question has received the attention of the Commonwealth Institute of Science and Industry, which has issued a bulletin written by Mr. Gerald Lightfoot, summarising all the available information on the suitability of Australian raw materials for pulping purposes, and giving the results of some investigations of much interest and importance which have been carried out by the Institute.

The question is of special importance at the present time in view of the fact that during recent years there has been a serious shortage throughout the world in the supplies of raw material for paper making. The devastation of forest areas for wood-pulp has become so serious that in various countries systematic planting of suitable trees has been undertaken. Relief from this source, however, cannot be expected for 40 or 50 years, when wood-pulp species planted now will be ready for harvesting. When Australia looks ahead it will see a large increase in population, and a shortage of paper-making materials in other parts of the world from which it now draws its supplies.

The only thorough investigation into the suitability of Australian timbers for pulping purposes of which the results have so far been completed and published is that made by Mr. H. E. Surface, consulting engineer at the U. S. America Forest Products Laboratory, for the Government of Tasmania, in 1915. The investigation was limited to four species, viz., myrtle (or beech), swamp gum, blue-gum, and stringybark. Mr. Surface concluded that the utilisation of these trees for pulping purposes in Tasmania is not a feasible business proposition. He has, however, informed the Institute of Science and Industry that he considers that there is quite a possibility of building up the wood-pulp industry in Australia through the use of native woods other than those reported on by him, and he urges that a thorough survey be made of Australia's paper-making resources. If suitable native woods are not forthcoming, he considers that attention should be given to the question of planting suitable trees.

Both the New South Wales and Victoria Governments have sent samples of native trees to paper mills abroad for tests as to their pulping qualities. Mountain gum was sent from New South Wales to Canada, but the results of the test are not yet available. Samples of both mountain ash and silver-top were sent from Victoria to Norway, but they were

tested only for mechanical-pulp, for which purpose they were found unsuitable.

Results are given in the "Bulletin" of some very interesting experiments carried out in France on the pulping qualities of young Australian eucalyptus, some of which give excellent results in the manufacture of paper-pulp.

If the reports received are confirmed, the cultivation of pure forests of certain species of eucalyptus for pulping purposes may prove to be practicable commercially, while there may already be in existence forests of immature trees which could be used commercially for paper-pulp.

### Pulping of Karri Trees.

Results of much interest and value have been obtained from experiments which are being carried out by Mr. L. H. Boas, Technical School, Perth, W.A., on the pulping qualities of karri trees. The experiments show that the yield of pulp is satisfactory, the best results being obtained from trees about eight years old. It is not improbable that even mature karri can be used to make a satisfactory paper, and this may offer a partial solution of the problem of utilising the enormous quantities of waste karri at the saw-mills in Western Australia.

Reports received from experts regarding the possibility of cultivating spruce as a crop in Australia indicate that that tree does not grow rapidly under Australian conditions. It is possible, however, that spruce might be profitably grown for pulping in the mountainous parts of Victoria and Tasmania. The Victoria Forests Department intends to plant experimental trees on the high plains.

Tests on the pulping qualities of a number of Australian grasses, rushes, sedges, and other plants have been carried out for the Institute of Science and Industry through the kindness of the Australian Paper Mills Co., Ltd., Melbourne, by the company's chemist, Mr. A. E. Clarke. The following were found to be unsuitable for paper-making: Button bog rush, awned saw sedge, Queensland hemp, saltbush, spinifex grass, and the inner parts of the stems of the zamia palm.

Blady grass, or *alang*, which is one of the commonest grasses in Northern Australia, and which also occurs in Papua, Java, and the Malay Archipelago, is favorably reported on, and is being used for pulping purposes on a small scale at Cairns, Queensland.

Marram grass, which has been planted on about 5,700 acres of coastal land in Australia, chiefly at Fort Fairy, Victoria, has also been reported on favorably by British authorities. The Australian Paper Mills Co. has, however, found that the grass suffers from various disadvantages. It is doubtful whether, under Australian conditions, the harvesting of the grass could be effected sufficiently cheaply to enable it to be used profitably for pulping purposes.

Prickly pear has been investigated for its pulping qualities by authorities both in England and Australia. The results show clearly that this material cannot be profitably converted into paper-pulp.

The information given in the Bulletin is of much interest and value, and affords an illustration of the valuable work which the Institute of Science and Industry will be able to carry out for the development of Australian industries, when it is provided with laboratories of its own and thus enabled to carry out the systematic and comprehensive experiments which are necessary before many of these important problems can be solved.



# UNITED STATES NOTES

Among the interesting papers read during the business sessions of the Technical Association at Buffalo, that of Dr. Aeree on "The Destruction of Wood and Pulp in Storage by Fungi and Bacteria," was made the subject for a discussion that led to the introduction and adoption of a resolution urging upon Congress the need for passing legislation that will devise and put into application methods of control. According to Dr. Aeree who bases his estimates upon replies to a questionnaire sent to a list of pulp manufacturers, between 5 and 10 per cent. of wood is destroyed in storage as a result of fungi and bacteria, and between 10 and 20 per cent. on an average and sometimes as high as 50 per cent. loss in strength of the pulp results from this growth. Paper manufacturers in the United States lose between \$5,000,000 and \$10,000,000 annually from this source, said Dr. Aeree. If this condition could be done away with, and 95 per cent. of it might be avoided, paper manufacturers would then be able to make pulp with less wood, less bleach and in addition store pulp indefinitely and sell the excess power they would have, thus adding further and materially to their profits. Prof. Ralph H. McKee told of the results of experiments carried on at the plant of the Hammermill Paper Company at Erie, Pa., which led him to discover a means whereby a gallon of alcohol may be recovered from every 100 gallons of sulphite waste. The business of the meeting was concluded after it had been decided to hold the fall meeting of the association in Chicago, Ill., during the same week in September in which the American Chemical Society will hold its semi-annual gathering.

In deciding the case brought by the Michigan Paper Mills Traffic Association against the New York Central and other railroads seeking removal of alleged discrimination, the Interstate Commerce Commission has declared that rates on paper throughout the trunk line territory must be reversed to make them conform to a definite and uniform basis. Defendants were allowed forty-five days to propose a revised schedule that will eliminate the inequalities disclosed by the evidence. "It is definitely established," the commission said, "that many of the rates on paper in the East have been made by the carriers largely for the purpose of permitting mills on their lines to compete in certain markets with other mills more favorably located.

## U. S. PULP AND PAPER MAKERS PROMISE EMPLOYMENT.

The American Pulp and Paper Association has notified the War Department that it pledges itself, for all its members, to take back every employee who left the industry to enter the Military or Naval service of the United States.

The Association has appointed a special committee of five, whose business it is to see to it that this pledge is carried out. Pressure will be brought by other members of the Association on any of their number who prove recalcitrant. In addition, the committee has requested the War Department to give it the

names and addresses of any soldiers and sailors who entered the service from the paper industry and who have been unable to find employment.

Commenting on this action, Colonel Arthur Woods, assistant to the Secretary of War, and charged with dealing with the employment situation, has issued the following statement:

"Many big business organizations have taken the same action as that taken by the American Pulp and Paper Association. If every industry in the country would do the same, our work would be greatly simplified. If every employer in the country will just pledge himself to take back all of his employees who went into the service there will be very little unemployment among discharged soldiers and sailors."

## U. S. IMPORTS OF PAPER STOCK.

Imports of paper making rags during April, 1919, amounted to 760,204 pounds valued at \$18,056, an increase in quantity of 144 per cent. compared with 311,096 pounds valued at \$10,893 for the same month in 1918. The arrivals for the ten months ending April, 1919, equaled 3,029,553 pounds valued at \$158,858, a decrease in bulk of 85 per cent. compared with 19,709,478 pounds valued at \$471,926 for the corresponding period ending April, 1917, and a decrease of 93 per cent. compared with 40,871,795 pounds valued at \$1,010,292 for the corresponding period ending April, 1916.

## FOREST SURVEY BY AEROPLANE.

New York, July 7.—An airplane expedition to ascertain the value of the woodpulp resources of Labrador sailed from New York to-night for Nova Scotia. The party of 40 is headed by Captain Daniel Owens, who served two years with the British Air Force. It is planned to take aerial photographs of all the large forests, and from these calculate the value of the woodpulp. Four airplanes are to be used in the undertaking. By this method it will take about six weeks what would ordinarily require 5 or 6 years.

## BRITISH COLUMBIA MARKET.

One of the large wholesale paper dealers in Vancouver states that just as soon as strike conditions in the west get down to a settled condition that there will be a very fine business in all lines of paper in British Columbia. This does not apply to any one line, but to all lines.

Kraft paper will be in demand now for fall delivery to the large frozen fish packing firms.

Vancouver should be a large shipper for trans-Pacific trade. This port is the logical port for Canadian shippers to the Antipodes, and the Oriental market.

Remember, however, before going after this line of business that every precaution should be taken to find out just what the requirements of this trade are, and also how these shipments should be packed. This last is most important to all shippers to the foreign market, and cannot be too strongly impressed on those going after this class of trade.



## Technical Section



### PROGRESS OF VOCATIONAL EDUCATION WORK.

At the meeting of the Technical Association of the Pulp and Paper Industry, held in Buffalo last month, the joint effort of that Association and the Technical Section of the Canadian Pulp and Paper Association to produce a suitable textbook on pulp and paper manufacture received considerable attention.

R. S. Kellogg, secretary of the Joint Executive Committee, reviewed the progress that has been made in collecting from the American mills. He explained that the Canadian Pulp and Paper Association at the last annual meeting had voted \$5,000 this year, and would do the same next year, assessing each mill on a pro-rata basis. The American mills are not so closely organized, and must be canvassed individually. Local mill associations have interested themselves in the matter and half of the \$20,000 expected of the American mills has been raised already, on the two years spread basis. There seems no doubt about easily raising the \$30,000 estimated as the expense of preparing the manuscript for the work.

#### What the Books Will Contain.

J. N. Stephenson, who has been engaged by the Committee to act as editor of the work, gave an outline of the scope of the textbooks. He said:

The first joint meeting of the two committees on vocational education, representing Canada and the United States, met in this city last September. The joint executive committee was formed to proceed with the preparation of a set of textbooks which would represent modern practice on the American continent and to further proceed with arrangements for the publication and distribution of these books. It was decided that the books should include instruction in what we might call the prerequisites of arithmetic, elementary chemistry, physics, mechanics, hydraulics and electricity. I may say that the authorship of all of those preliminary papers is provided for; some of them—two of them—are practically finished, and another is one-third completed. That will form the first volume. I may say that the total will be four volumes, including altogether about 2,000 pages.

The second volume will take up the manufacture of pulps and be divided into eight sections. The authorship for most of those is also provided for and work is going forward on a number of them. The third volume will begin with the preparation of fibers in the paper mill, other than woodpulp, and carry that through the operation of the paper machine. A number of those sections are also provided for and work on some of them has also been carried forward to a considerable extent.

The fourth volume will carry the manufacture from the paper machine. The finishing portions will include tub-sized papers and any particular kinks in our most important specialties. It will also include the testing of paper, laboratory equipment and a section of general mill equipment, such as pumps, steam apparatus, recording and other instruments, regulators, mill repairs and things of that kind, power transmission and so on; and a chapter on trade customs,

including a sub-chapter on mill organizations, showing the functions of the different departments; so that a man in one branch of the work would realize the dependence on his good work of the results in some other department; and finally there will be an appendix, including a dictionary of papers, with their peculiarities and uses, and some general information and some usual—and perhaps unusual—tables.

At the present time we may confidently look forward to the completion of the manuscript for at least half of this work by October 1, and the rest of it will come along as the convenience of some of our very busy men, who have consented to give their time to the preparation of the work, permits them to do so.

The matter of issuing the textbook is another proposition and depends not only on ourselves, as far as our ability to provide the manuscript goes, but also on the desires and practice of the publishers, in regard to what they consider and know to be the best practice; and that, I believe, will be treated carefully by the chairman of your committee.

I may say that our plan in connection with this work is to have the manuscript prepared and submitted in duplicate form, a number of copies of each paper being submitted and distributed among a few of the men who are easy to get at and who have a reputation for promptness, to look them over and make corrections where they see errors have crept in, to make suggestions where omissions have been made, and to bring the work, in that way, up to the present day; and to include any little kinks that a particular individual may be aware of, that the author may never have heard of. We trust that whenever any of you are called upon to review any of this work, that you will do so with goodwill. We also trust that any of you who are familiar with any particular phase of work that may be carried on in your mills, or any particular procedure that may not be generally known, but may be beneficial, will submit information on that to the editor, who will be glad to communicate it to the author of the section to which it applies.

#### PROPOSED PLAN FOR FUTURE PROGRESS.

If the textbooks are to be of real value they must be studied by the men and boys in the pulp and paper mills, offices and warehouses. George Caruthers, Chairman of the Joint Educational Committee of the Vocational Educational Committees of the Pulp and Paper Industry has given a lot of deep thought to this matter of distributing the books, and inspiring a desire to study. He was called on by President Hatch and gave an interesting account of the progress of committee work. He said that the prospect of soon having a thoroughly practical set of textbooks was good. He outlined a plan which had been proposed of getting young papermakers interested in the course, saying:

We all know that once these books are in the hands of a young papermaker, the tendency is for him to look at the books in a superficial sort of way, put them up on the shelf and say: "That is a mighty good course and I am going to read it sometime."

Now, it has been proposed that we appoint an educational director. This educational director will have a stenographer assistant, preferably a woman who has had a college training, that would make her competent to correct preliminary papers. The papers from the various students will be sent to this clearing station. They will be corrected and returned to the student, when a certificate of progress would be given to him.

After we come to lectures on beating, the papers will be sent to the educational director on beating and be marked by him and returned to the student.

Now, the advantage of that system is, that we would not have to carry an expensive staff. It has been estimated that there may be about forty papers in this course, and the selling and instruction would cost about \$1 a paper; that is, to give the proper kind of instruction, the correction and instruction which would be in keeping with the dignity of the industry. In order to reduce the expense of collection it is proposed to have the student sign an order on his firm. The firm would deduct so much a month—it is thought desirable to divide it up—and forward it to the educational director, who, in turn, would pass out a certain amount of money to the man who corrects the papers. There are men in the industry who would be glad to correct those papers for, say, twenty-five cents a paper—a nominal amount—but I mention this to show that in getting out these textbooks we must have a follow-up system; and it will be the duty of the educational director to send out inspirational letters to the men who are not making good progress. If a man grows indifferent, we shall perhaps send him a letter and tell him that we expect to have another paper for him in ten days; that we are greatly interested in his progress and will be glad to assist him if he desires us to do so.

The consideration of this phase of the problem brings the Education Committee of the Technical Section back to their first line of work, the encouragement of facilities for mill men to study their own business. This matter may be brought up at the summer meeting of the Section the last of this month.

#### NEW MEMBERS.

Prospects for a future supply of Canadian technical men are improving since the Technical Section established a connecting link between the school and the mill. Another group of young men who are getting practical experience this summer have been elected to student membership in the Technical Section. May they all increase in wisdom and enthusiasm and in satisfaction at having chosen to link up with the Pulp and Paper Industry—if they are of the stuff that sticks and makes good. The following are the newest members: W. G. Mosher, D. G. Mackenzie and C. H. O. Crowe, all at Dryden Pulp and Paper Co., Dryden, Ont.

George William Charters, of the Laurentide Co., Grand Mere, P.Q., is the latest addition to membership in the Technical Section. A hearty welcome to him.

#### TECHNICAL SECTION TRIP \$26.75 NOT \$28.75

An unfortunate error occurred in printing the reply cards regarding the intention of members to take in the summer meeting at Kenogami. The price of the round trip from Montreal is \$26.75 as announced last week in this magazine and not \$28.75 as printed on the cards.

#### REVIEW OF RECENT LITERATURE.

**A.3. Bagasse for papermaking.** J. H. Wallace, Paper Mill, 42, No. 24, page 54 ((1919)).—Satisfactory printing papers can be made, but the difficulties in the way of successful commercial operation are that bagasse is produced during only part of the year, and deteriorates rapidly on storage, and that it furnishes an important part of the fuel used in sugar mills. R. C.

**A.6. Analysis of coal.** Pulp and Paper Magazine, 17, No. 21, p. 483, (1919), No. 22, p. 508 (1919).—The standard methods of the technical section of the C. P. & P. A. are given.—R. C.

**K.7. The Griley-Unkle Pulp Extractor.** Pulp & Paper Magazine, 17, No. 25, p. 596 (1919). A series of 1 1/4 inch holes is bored in front of the hood of the roll of the broke beater in such a position that the finished stock is forced through and the rest held back.—R. C.

#### CHEMICAL LABORATORY AT SHAWINIGAN FALLS.

A well-equipped scientific workshop, where the chief chemist of the Belgo-Canadian Pulp & Paper



Co. and his assistants keep proper track of the quality of raw materials and control of manufacturing processes. It is work of this kind that will keep Canadian products at the head of the list.

#### PULPING EXTRACTED YELLOW PINE CHIPS.

At the present time large quantities of extracted yellow pine chips are produced in the distillation of turpentine and the solvent extraction of pine oil and rosin. These chips are utilized for fuel at the extraction plant and any excess over fuel requirements is a complete waste.

That such chips can be made into a fair grade of pulp which is suitable for making kraft paper or container board has been demonstrated by recent experiments at the Forest Products Laboratory, Madison, Wisconsin.

Only the largest size of chips should be used in order to avoid dust, shives, and small chips which consume chemicals and yield only a small percentage of pulp. The wood should be chipped at the extraction plant into the largest sized pieces compatible with proper extraction. Proper screening of the extracted chips before pulping will be a decided help. It is also important not to tender or burn the chips in the preliminary steam distillation process.—U. S. Forest Products Laboratories "Technical Notes."



# PULP AND PAPER NEWS

Elihu Stewart, of Toronto, vice-president of the Spruce Falls Pulp and Paper Co., who intend erecting a hundred and fifty ton newsprint mill at Kapuskasing, Ont., left last week for British Columbia on a business trip in connection with the Canada Timber and Lands Co., of which he is managing director. He will visit a number of pulp and paper plants on the coast.

S. F. Duncan, of Toronto, secretary-treasurer of the Provincial Paper Mills Co., spent the past week on a business trip to Port Arthur, and reports that the Port Arthur Pulp and Paper Co. are very busy at the present time and everything in connection with the plant is running smoothly.

F. A. Ritchie, of Ritchie and Ramsay, coated paper manufacturers, Toronto, who has been spending a few days with his wife and family at Kennebunk Beach, Maine, has returned home.

S. A. Mundy, of Bradford, Pa., President of the Spruce Falls Pulp and Paper Co., spent a few days in Toronto last week in connection with the affairs of the company. It is understood that members of the staff of George F. Hardy, of New York, who has the plans in hand for the new pulp and paper mills at Kapuskasing, are making a survey of the Kapuskasing river from Spruce Falls to Chapleau, Ont., a distance of one hundred and fifty miles, with the view to erecting a larger concrete dam at the mill site than was originally intended. The dam will be big enough to furnish the necessary power for a plant of 250 tons capacity instead of 150 tons as at first contemplated, and thus the company will be in a position to take care of future additions.

Henry A. Donahue, sales manager of the gummed paper department of the Ideal Coated Paper Co., Brookfield, Mass., spent a few days in Toronto last week on business.

W. H. Sheriff, of the Hodge-Sheriff Paper Co., Toronto, spent the past week in Montreal, where he met Mrs. Sherriff, who has come over from England to take up her residence in Toronto.

George E. Challes, of Toronto, sales manager of the Riordon Pulp and Paper Co., who some time ago sold his house on Rusholme Road, Toronto, has purchased an attractive new residence at 14 Wellwood Ave., Cherry Gardens, Toronto, and has moved into his new abode.

Charles V. Syrett, managing director of the Victoria Paper and Twine Co., Toronto, accompanied by Mrs. Syrett, sailed this week from Montreal, on the "Minnedosa" and will spend a couple of months in the Old Country on business and pleasure. During his absence his duties will be looked after by L. E. Charles, sales manager of the Victoria Paper and Twine Co.

Major J. T. Stirrett, former editor of "Industrial Canada," Toronto, who went overseas in January, 1916, and was on active service, has since his return a few months ago, been appointed general secretary of the Canadian Manufacturers' Association. At the recent annual meeting of the C. M. A. in Toronto, W. A.

Craick, who was acting editor of "Industrial Canada" during the absence of Major Stirrett, was appointed editor of that publication and will shortly assume full charge. Mr. Craick has for a number of years been connected with the "Financial Post," of Toronto.

W. P. Bennett, President of the Rudd Paper Box Co., Toronto, who was elected President of the Canadian Paper Box Manufacturers' Association at the recent annual meeting in Montreal, has returned to Toronto after spending a pleasant holiday in the New England states. He is receiving the congratulations of many friends in the trade on his elevation to the position of presiding officer.

The many friends of W. N. Hurlbut, formerly of Toronto and now assistant to George H. Mead, President of the Spanish River Pulp and Paper Mills, Dayton, Ohio, will congratulate him on his election as a director of the Whalen Pulp and Paper Mills, of Vancouver. Mr. Hurlbut's advancement in the pulp and paper world has been rapid and well deserved.

Dr. B. E. Fernow, Dean of the Faculty of Forestry, Toronto University, who has just retired from that position, has been connected with Toronto University for the past twelve years and was relieved of duty at his own request, owing to the fact that for some time his health has not been of the best. Dr. Fernow will return to the United States and as soon as his health improves will continue his work in authorship. He is the author of a number of notable productions dealing with forestry and kindred subjects. So far as Canada is concerned he prides himself on the work which he has promoted in the Commission of Conservation and on the success of the graduates in the Faculty of Forestry.

Lieut.-Col. John A. Cooper, commanding officer of the 198th (Bufs) Battalion, who has spent several years overseas, has returned to Toronto. Previous to entering the army, Col. Cooper was editor of the Canadian Courier, Toronto, and for some years was secretary of the Canadian Press Association, of which organization he is also a past president.

A charter has been granted to the Niagara Wall Paper Co., Limited, with headquarters at Niagara Falls, Ont., with a capital stock of \$40,000. The provisional directors are T. M. Updegraff, B. D. Fuller, and A. W. Gray.

Among those, whose names are prominently mentioned as Chairman of the new Court of Commerce, to be created by legislation for the curbing of rapacious traders, is R. A. Pringle, K.C., paper controller and at the present time government counsel on the Cost of Living Committee of House of Commons.

The "Rideau Record" and the "News," of Smith's Falls, Ont., have been amalgamated and will be issued semi-monthly as the "Record News." G. F. McKim, editor of the "Rideau Record," and Harry Sutton, who has been connected with the paper for over thirty years, are the proprietors of the new merger.

H. S. Laughlin, who has entered upon his new duties

as chief forester for the J. B. Snowball Co., Chatham, N.B., has been acquainting himself with the different regions of the company's limits and will carry out a five per cent cruise of the ninety square miles of the holdings of the company on the Tabusintac river. Two cruising parties will be employed.

B. H. McCreath, assistant business manager of the Toronto Star, with which paper he has been identified for the past thirteen years, has retired and will be identified with a large steel company, which he has induced to locate in Goderich.

The Rolland Paper Co., Limited, of Montreal, have issued a neat leaflet, entitled "Facts concerning Canada's Production of Paper." The company state the first mill to make finished high grade bond and writing papers was built by them in 1882 at St. Jerome, Que., on the North river and that the mill was equipped to produce a loft-dried and tub-sized paper of the highest order and immediately specialized in all rag paper which was water-marked. In 1885 this paper captured the gold medal at Antwerp, in 1893 the gold medal at Chicago, and in 1900 the Grand Prix at Paris. In 1912 the Northern Mills Co., of Mont Rolland, Que., were taken over by the Rolland Paper Co., which enabled the company to increase production and make a complete line of bond and writing papers. The firm's announcement makes a strong plea for the use of Canadian-made papers.

Carl Riordon, of the Riordon Pulp and Paper Co., Montreal, who has completed his work on the Royal Commission on Industrial Relations, has gone to his summer home at Cache Lake, Que., where he will spend a holiday.

Martin Leverty, who for twenty-eight years was a member of the staff of the Canadian Bank of Commerce, being manager of the stationery department, died this week, aged 56 years.

The firm of Booker and McKechnie, is carrying on business as Sales Engineers at 285 Beaver Hall Hill, Montreal. Mr. McKechnie is a graduate of the University of Toronto, Faculty of Applied Science, 1909, and an Associate Member of the Engineering Institute of Canada. Among the lines represented by Booker & McKechnie that are of interest to the Pulp and Paper Industry are the products of the United States Gypsum Company—Pyrobar Roof Tiles. Pyrobar is particularly adapted to the roofing of paper mills, since owing to the splendid insulating qualities of the gypsum, this style of roof reduces condensation and sweating to a minimum. The pyrobar, because of its low conductivity maintains a temperature at the under-side of the roof, the same as the average temperature in the room. This feature will no doubt be much appreciated by mill owners.

#### NEW POSITION FOR H. R. MacMILLAN.

H. R. MacMillan, who was in the aeronautical supplies department of the Imperial Munitions Board during the war, and is widely known in forestry circles, has been appointed representative of the British Timber Buyer in Western Canada, with offices in Vancouver, B.C. He was recently on a trip to New York, Philadelphia, Montreal and Ottawa looking into shipping and other conditions. Mr. MacMillan was formerly chief forester for British Columbia.

A lot of Birnam Wood out-lid Shakespeare, and went clear to France.

#### ALBERTA FORESTS BURNING UP.

Calgary, July 8.—The big forest fire approaching Calgary down the Elbow river on the West, was about two miles from the western edge of the Saree Reserve Monday, and the services of all men on the reserve were commandeered, but so far they have been unable to halt the steady progress of the flames.

The Sheep Creek district, where tremendous damage has been done to timber by the big fire raging there for weeks, also experienced another bad day on Monday. The flames jumped across the Lynx Creek several times, but in each instance the fire fighters were able to hold them. This fire is now moving down the North Fork of Sheep Creek.

No late reports have been received from the big fire west of Morley, which jumped the Ghost river on Sunday. The last reports were that this fire was spreading badly.

The big fire in the Porcupine hills which was started by lightning has now been under control for about ten days. It is estimated that between fifteen and eighteen million feet of timber were destroyed in this one fire alone.

The big fire on the Clearwater river between the Red Deer and Saskatchewan rivers, yesterday jumped the Clearwater river, and is now eating into the north part of the Bow river reserve.

#### Situation is Serious in Ontario.

Cobalt, Ont., July 8.—After a few day's respite from bush fires, following the rain of last Friday, smoke clouds are beginning to fill the Northern Ontario sky again. On the Elk Lake branch of the T. and N. O. where the rainfall was very light, the situation is still serious and reports from Earleton tell of continual fights to save settlers' farms from fire. One man had his roothouse, three feet underground destroyed, but so far as is known here no buildings have yet been burned although the fire crept as close as 20 feet in some instances.

It is declared the bush from the main line of the railway east of Elk Lake is burning, and advices from north of Englehart say smoke clouds are visible at different places.

The two fires behind Haileybury are again flaring up, but no damage is reported yet. Rain is urgently needed, but the weather this evening did not point in that direction.

#### PRICE BROS. ERECTING NEW UNIT.

Judgment has been delivered in the case of Price Bros. & Co., of Quebec, against whom information was laid sometime ago for operating one of their paper plants at Kenogami on Sunday. The Court of Appeal rendered judgment against the company on the question of Sunday labor on June 27th, and Price Bros. are now considering the advisability of carrying the matter to a higher tribunal.

The installation of a further unit at the company's paper mill at Kenogami is proceeding satisfactorily and it is expected that it will be in operation about December. The high scale of wages prevailing and the excessive cost of all camp material is bound, in the opinion of Price Bros., to raise the price of wood. The company are building a new and thoroughly up to date saw mill at Matane, Que., which will be ready for next season's cut.

Go to Kenogami, July 28.



### CANADIAN TRADE CONDITIONS.

Toronto, July 7, 1919.—Market conditions generally continue good, and all the mills are well employed. The number of inquiries from abroad is coming in steadily, but one cloud on the horizon is the announcement that the British Ministry of Shipping has decided to take 70 per cent of cargo space next month, leaving only 30 per cent for commercial purposes. It was thought that the release of vessels, now used as transports for Canadian troops, would materially improve the situation, and that space, which has been commandeered by the Government, would in a few days be partly released, but it appears that such is not to be the case. The Canadian Pulp and Paper Association are using all their influence and power to secure more adequate accommodation for shipping, but progress so far has not been very encouraging.

The price on coated papers of all kinds has been advanced in the east by half a cent, and it is expected that the Ontario mills will follow suit in a few days. The ascension is caused by the increase in the price for raw stock, and naturally the coating plants must get more for the finished product. The coated paper business is keeping up well, and one company is considering erecting an extension to its plant and installing two double coaters. Paper box makers are all busy, and so are board mills and prices on the other side of the line have been withdrawn, but the Canadian quotations continue the same as they have been for the past few weeks, although liable to change, it is said in an upward direction, at any moment.

Owing to the advance of ten to fifteen dollars a ton on bleached sulphite, it is expected that, in the near future, there will be a raise on all grades of paper into the manufacture of which bleached sulphite enters. Unbleached, it is rumored, is also due for an increase at no distant date. The revival of the paper business on the other side of the line, where nearly all mills are from six weeks to two months behind in their orders, is causing a better demand for pulp, and the market is getting more active all the while. Bleached

sulphite is now quoted at the mill from \$110 to \$115, easy bleaching at \$85 to \$87.50, and news sulphite at \$65 to \$70.

It seems that one factor after another is affecting the wholesale paper business in Toronto. During the past twelve days it was the strike of the street car men, and this week it is the action of the teamsters. The strike means that no shipments of freight can be delivered to the local railway sheds nor can the incoming freight be delivered from the sheds to the consignee. The men are demanding a recognition of the union, a 44 hour week, and the following wage scale: Single teamsters, \$25; double teamsters, \$26; and motor truck drivers \$27 per week.

Another bolt from the blue has been the action of parliament in extending the powers and jurisdiction of the Paper Controller after the signing of the Peace Treaty, and also extending the authority of the Paper Tribunal. Canada is the second largest pulp and paper producing country in the world, but if the arbitrary course and meddlesome policy of the authorities at Ottawa are to be continued ad infinitum, there will be no expansion or development of the industry. The debate aroused much interest in the Commons, and, in projecting jurisdiction after the declaration of peace, it appears as if the government must be having an eye to an election in the future, and wants the press to be favorable to the Unionist cause. The long drawn out proceedings, if they were not so inimical to the interest of the manufacturers, would savor of farce comedy and the question is asked when all this balderdash regarding the impecunious publishers is going to end. For nearly three years now supervision has held sway, and the manufacturers think that it is high time the law of supply and demand was reverted to. Big propositions are being held up, and there are many Canadians out of employment who could find work in erecting new mills and in supply houses, but no progressive steps will be taken by the large companies until the industry is freed from the incubus of government control. Speaking of the situation, a leading manufacturer remarked this week:

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# Ground Wood

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ket.

used to no sand on the railways and the manufacturers owned the government, and had all unfavorable legislation throbbled or manipulated in their interest. How times have changed! Who control and operate the authorities today at Ottawa? There is only one answer, and that is the farmers and the press, both of which bodies can get nearly anything they ask for. To say, as has the Minister of Finance, that if the government had not taken action many publishers would have been put out of business by reason of the high price of newsprint is an insult to the intelligence of those who have given the problem any serious thought."

The continued interference with the newsprint industry by the Federal Government comes at a particularly inopportune time, just when export is looming up auspiciously, and signs are multiplying on all sides that labor, transportation and other troubles will soon be over, and the world markets open to the Dominion. The mills will have to get more for their product in the near future as wages are constantly going up, the price of pulp ascending and the cost of living aviating all the while. One M.P. charged that the paper manufacturers of Canada had been compelled to supply newsprint to publishers at less than cost, and he alleged that the press of the Dominion had been profiting with the money of the Canadian newsprint producers.

The various pulp and paper companies have been notified by the Canadian War Board that from now on the car situation will become more acute, and the shortage will reach the extreme point about the middle of next fall. It is pointed out that any situation along these lines which may come about, will be ameliorated if all concerns will continue the policy of placing the maximum load in each car. In regard to the export situation the outlook is slowly improving, and more pulp is going overseas than for some time. As soon as Mr. Dawe of the Canadian Pulp and Paper Association, reaches England, he will have an opportunity to size up matters, and will send interesting reports from time to time on general conditions and market arrangements as they appear to him on the other side of the water.

Although the United States has reverted to two cent postage on general letters, and one cent on drop letters, there is not much hope of Canada doing the same, according to an announcement made in the Commons last week by Premier Borden. He stated that the matter was entirely a question of taxation, which would have to be taken up in connection with the budget, which is interpreted to mean that there will be no reduction until the next session of the House.

Reports received from the Eastern States intimate that there has been a decided falling off in the rainfall, and the indications that the water in the Black River district will soon be very low. This may mean that a number of grinders will be unable to operate, and will further tend to strengthen the market for groundwood pulp, in which the demand of late has considerably improved, and quotations are somewhat higher during the past few weeks than they have been.

An enterprising firm, which is the maker of fibre roofings, have sent out notices to the trade asking them to make an expert examination of any fibre roofings of their own expense, and absolutely without obligation on the part of the contractor, and this concern is also in the business of doing roofing contrac-

tors. A number of paper mills have accepted this unique offer, for which no charge is made for the service.

**Pulp Prices.**

	F.O.B. Mill.
Groundwood pulp . . . . .	\$28.00 to \$30.00
Sulphite, news grade . . . . .	\$65.00 to \$70.00
Sulphite, easy bleaching . . . . .	\$85.00 to \$87.50
Sulphite bleached . . . . .	\$105.00 to \$115.00
Sulphate . . . . .	\$80.00 to \$85.00

**NEW YORK MARKETS.**

New York, July 5.—Increasing strength in prices and a steady expansion of activity have been the outstanding characteristics of the paper market this week. Consumers and jobbers in all parts of the country have been active buyers, and the movement of supplies out of producing centres has undergone further growth until now there is by far a larger business being done in practically every grade of paper than at any time since the signing of the armistice. With the coming of peace and the regaining of confidence in the stability of prices, coupled with the expansion of requirements as a result of increased activity in other lines of commerce, buyers of paper are operating in the market with more freedom and are showing little reluctance in meeting the prices asked.

One of the main sources of increased activity is the growth in demand from exporters of paper. Freight conditions are at last becoming untangled, shipping rates are dropping and foreign consumers are coming into the market for larger amounts of paper, so that export firms are effecting more sales than they possibly ever have before. New markets in South America and elsewhere are being repeatedly opened up, and signs are not wanting that a goodly percentage of the business now being secured is going to be retained even after European manufacturers are in a position to be more of a factor in the trade. Paper mills in the United States are devoting a great deal more attention to foreign business than they ever deigned to in the past. Representatives have been sent abroad to study market conditions in the various countries that buy from America, and efforts are being furthered in various directions to build up an export trade that will be lasting.

Newsprint is moving into consuming channels in a steady way, and in good volume. Publishers are repeatedly finding it necessary to come into the market for supplies to augment their contract deliveries, so that the demand for spot shipments is quite active. Prices are strong, and the lack of usual surplus stocks seems sufficient to keep quotations at least at present levels for some time to come.

The market for book papers is exceedingly firm. Most mills, and especially those making coated book papers, are sold so far ahead that they are disinclined to enter into further commitments, and orders are consequently being refused. Manufacturers with few or no exceptions are operating their machines at capacity, and are shipping out their production about as soon as it becomes available. Prices are strong and tending higher.

Fine papers are moving in larger amounts and at firm prices. The sharp increase in raw material costs has the expected influence on quotations on the finished product, and manufacturers are frequently turning down orders unless securing the advance in

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prices demanded. Many mills have withdrawn their cheaper lines of bond and ledger papers, having found that they cannot profitably produce these grades. This of course is resulting in more demand for the higher-priced grades. Tissues are firm and in good demand. Wrapping papers are moving in increased volume, and at stronger prices. Quotations on bag papers have been sharply advanced, chiefly as a reason of the increased cost of raw material.

Boards are in moderate demand, but activity in this end of the market is still below a par with that in the various grades of paper. Boxmakers are still holding off to an extent in covering their fall requirements, and the majority of mills are looking for business. Prices are maintained, however, and the rising cost of paper stock seems about to be followed with an advance in prices on boards.

**GROUNDWOOD.**—The market for mechanically ground wood rules firm, and business of fair proportions has been done this week. Newsprint manufacturers are coming into the market off and on for spot lots of pulp to augment their contract supplies, while other buyers are operating in normal fashion, absorbing comparatively large amounts of fibre. Prices range between \$27 and \$29 per ton at the grinding mill for No. 1 pulp of all-spruce variety, with reports heard of occasional sales at as high as \$30.

**CHEMICAL PULP**—Demand from consuming quarters of chemical pulp is fairly active, and prices continue on the uptrend. Paper manufacturers are still pursuing a policy of limiting their purchases to tonnages directly needed, but the requirements of the average mill are increasing to such an extent that it is compelled to buy larger amounts of raw material. Business in foreign pulp is steadily expanding. This is partially due to the fact that demand for special grades of finished paper is on the increase, while, too, the ability to get Scandinavian pulp at slightly lower prices than hitherto has brought more consumers in this country into the market as above. Producers on the other side ask firm prices, but importers, through a process of counter offers at recessions from the figures named in cables, are managing to effect purchases at lower prices. Foreign unbleached sulphite is being obtained at 4.25 to 4.75 cents a pound landed here, while bleached sulphite is being bought at 7.50 cents, easy bleaching sulphite at 5.00 to 5.25 cents, and Scandinavian kraft pulp at around 4.00 cents.

**RAGS.**—The rag market rules firm and active. De-

mand for roofing rags is clearly the prevailing feature, and the broad expansion of buying this week has caused prices to advance sharply. It is understood that felt paper mills have orders for large amounts of their product for shipment to Europe, and this accounts for the brisk call for rags suitable for this purpose. No. 1 roofing rags are now selling at 3.00 cents a pound at the point of shipment, while No. 2 stock is fetching between 2.70 and 2.80 cents, with dealers and packers experiencing difficulty in filling all the demand emanating from mill sources. Thirds and blues are moving in a consistent manner, and at firm quotations. Writing and blotting paper manufacturers are eager buyers, and are meeting the prices asked without reluctance. Repacked blues are quoted at around 4.25 cents a pound f.o.b., New York, with choice country packing selling up to 4.59 cents. White rags are firm and in good call. Stockings are quotably higher at 3.75 to 4.00 cents, while cotton batting, quilts and similar grades are being freely absorbed at rising prices.

**PAPER STOCK.**—Business of comparatively broad proportions has been transacted this week in waste paper. Demand has centred largely on soft shavings, books and magazines and kraft paper, but the low grades, as used by box board plants, have also been in good demand, and have moved up a bit in price. No. 1 soft white shavings have sold at 3.50 cents per pound f.o.b. New York, and dealers are now hesitant in booking further orders at this basis owing to the difficulty in inducing packers to sell at the prices previously ruling. Heavy flat stock of No. 1 quality has sold freely at 1.80 to 1.90 cents New York, while No. 1 kraft has easily commanded around 2.40 cents a pound. Folded newspapers are now quoted at a range of 65 to 70 cents per 100 lbs. f.o.b. New York, and No. 1 mixed paper at 50 to 55 cents. The strike of collectors and sorters in New York has materially reduced the available supply of old paper and has necessitated buyers seeking a greater amount of material in other cities. The reduction in output has naturally had a strengthening effect on values as well.

**ROPE AND BAGGING.**—Quotations on old Manila rope have again advanced and buyers seeking stock this week have found very little to be had at less than 5.50 cents a pound f.o.b. New York. Demand is brisk and dealers in most cases report being sold ahead. Strings are firmly quoted and are in good call. Scrap bagging is sought in fairly large quantities at a price basis of about 2.50 cents a pound at the shipping point.

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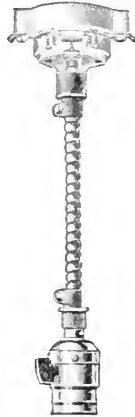
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### THE "PENNSYLVANIA DESERT," ONCE A FOREST.

Gifford Pinchot is the author of an interesting bulletin on Pennsylvania's forests. As forester for the United States government in the Roosevelt administration Mr. Pinchot was a zealot in conservation. Six million acres in this state, he cites, are impossible of cultivation. They are too rough and stony and produce nothing. A million acres of this land is owned by the state. Fires are ruining both private and state-owned land, he claims, and the legislature, he holds, is largely to blame. There are some extremely interesting things in what he says about what he terms "the Pennsylvania desert."

"The Pennsylvania desert," he says, "is costing our people twice as much as it costs to run the state. The taxes every year are only half the burden forest destruction lays on the people. We use in Pennsylvania about 2,300,000,000 feet of lumber each year. We might grow nearly all of it at home, on what is now the 'Pennsylvania desert.' But we let the fires run instead. So we paid for freight on lumber brought into the state in 1914 the tidy sum of \$12,800,000 and in 1918 certainly over \$20,000,000 and probably \$25,000,000. This freight bill grows every year. We certainly paid another \$25,000,000 for the 1,700,000,000 feet of lumber imported apart from the freight. Then the state department of forestry estimates the loss of wages due to forest destruction and the closing or removal of wood working industries \$20,000,000 more. Then there is the loss from floods, the loss to the business men of the state, the loss of population driven to other states to

find employment in lumbering, the loss of fish and game, the loss of summer resort business and other losses, which combined we may very conservatively place at \$15,000,000 a year. The direct damage from fire is the smallest of all—probably less than half a million—because outside of farmers' woodlots there is so little valuable timber left to burn. Taking it all together, we are well within the truth in estimating that the 'Pennsylvania desert' keeps out of the pockets of our people, and puts into their cost of living, not less than \$80,000,000 every year, or twice as much as the yearly cost of our state government, and doubtless three times the cost of buying the 'Pennsylvania desert.' On the otherside, Pennsylvania has specifically appropriated for forest fire protection, during the last six years, less than \$30,000 per year for the entire forest area of the state, or less than a quarter of a cent, per acre, in an ineffective effort to stop this gigantic loss. It has been like trying to put out a burning building with water in a spoon."

But how few people realize that the damage to the country does not end with the destruction of timber. Canada is beginning to look on the problem in a broad way, but only beginning. A big work lies ahead that requires the attention of every Canadian.

### SHIPMENTS OF COAL RESUMED.

The U. S. War Trade Board announce that shipments of coal may now be made from all parts on the Atlantic seaboard, and that the Collectors of Customs have been notified to disregard the provision contained in export licenses already issued to the effect that shipment must be made from Philadelphia or ports south thereof.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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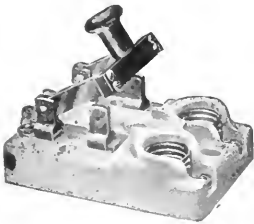
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# EDITORIAL

## A SIGNIFICANT TELEGRAM.

"British mills decide on three-tour system." These are the seven significant words cabled by A. L. Dawe last Saturday to the Canadian Pulp and Paper Association. It is not stated how many mills have adopted this system nor whether the action is taken voluntarily, or because of a demand from the workmen, or because of government action. The eight hour day, which of course means three tours, is in force in France and Italy also. In the former it is required by law. There are still mills on this continent, and not all in Mexico, where the 12 hour shift is in force.

This change in working conditions on the other side is bound to have a profound effect on the future of the whole paper industry and even on international trade. The question of hours is inseparable from a consideration of wages and there is no possibility under the present circumstances of having any reduction in the wages paid in general manufacturing. This means that the labor cost of English, French and Italian mills is increased approximately fifty per cent. It is true that their wages are low, as will be seen on another page, but their production in most if not all cases is far less per man and many of their raw materials are very high. Ground wood for instance, in Italy is about \$120 per ton and coal is practically unobtainable. Of course, the present is far from a normal time, but the Italian's \$2 per day and the Englishman's \$3 does not relieve the burden of another man for every two employed on the management of the mills for their tour labor.

Another big factor in production cost in England is the announcement just made of an increase of \$1.50 per ton in the price of coal. This naturally means a higher cost for every material that goes into the manufacture of paper. These increases in manufacturing costs will be a serious handicap to the British paper maker, especially in foreign markets, when he competes with Scandinavia, Germany, Belgium, Canada and the United States. His home market is protected by the lion at the gate, but there is a limit even to the extent that the Board of Trade can lay on restrictions. The consumer must be reckoned with as well as the producer.

It seems to us unlikely that some high grade book and writing papers are in much danger from Canadian and American products, but there does seem a better chance for our news, wrappings, and wood-fibre book and bond papers.

---

Nobody expected the Germans to make the signing of the Peace treaty an occasion for a national holiday.

## NO OUTSIDE INFLUENCE.

The organizations of pulp and paper mill workers are too well qualified to rule their own house to care for much dictation from outsiders. The rather general distribution among labor organizations of an element that has been striving for what has been termed One Big Union has brought home to union labor a consideration of the reasons for and advantages of separate unions for individual industries. The proponents of the One Big Union seem to want to saddle all labor organizations with the obligation to join in the sympathetic strike. Their attempt to force matters in Winnipeg and other Canadian cities, disrupt all business, endanger the health and lives of citizens and obtain unlawful control of the government, has opened the eyes of the honest and sensible majority of trade unionists to the serious dangers of a nation-wide or international adherence to such a doctrine. It is largely to the credit of the level-headed members of the unions that the sympathetic strike movement petered out. Some of the reasons why such a movement cannot and will not be supported by intelligent labor are contained in the following quotation from the organ of the International Brotherhood of Papermakers:

From some sources the thought is advanced of one big Union. The word itself spells easy, as only three letters are used in the spelling of "big," and theoretically it might appeal to some; we say theoretically with due consideration as to its full meaning and drawing the distinction between theory and principle. In principle we are inclined to believe that the theory expounded of one big Union is doomed to failure. Supposing for example that in a paper mill town in which a minority of the wage earners are employed in paper mills and the majority of the workers are employed in other industries—does the average paper maker today feel that he wants to go into a meeting and be out-voted by barbers, carpenters, clerks, laborers and others?

While we are not opposed to an Industrial Union which would take in all employees in any given industry, we have not forgotten, however, that when this principle was in effect that a number of the Local Unions seceded from the International Union. While we are not opposed to the principle of an Industrial Union we do feel, however, that the initiative for an Industrial Union should come from that class of workers employed in paper and pulp mills that at one time came under the jurisdiction of the International Brotherhood of Paper Makers and seceded therefrom. On the question of one big Union we positively dissent, and I think in this that we voice the sentiments of the average paper maker—that he is not willing to turn over to others that may be in the majority the right to say the conditions under which he or she might sell their labor.

There is nothing particularly new in the thought of one big Union, as under the old system of the Knights

of labor they advocated one Union, its membership was composed of all wage earners whether molders, machinists, carpenters, barbers, bartenders, waiters, clerks, and others, and the average paper maker today is not willing to concede that men outside of the paper making industry should make rules and regulations under which he would work. We believe the average paper maker wants, and will insist upon, a voice in the making of conditions under which he will labor. We believe the average paper maker when making an agreement intends to live up to it and will not allow others that may not be members of the Organization to vote or force them to strike if they have agreed to certain conditions acceptable to them. We are quite confident that the average paper maker wants results and he has passed the age of subjection to wild dreams and theories that in language may sound big but in practice are impossible of achievement, so plainly speaking we are opposed to the theory so far advocated of one big Union, but are not opposed to the principle of an Industrial Union providing the employees in the Paper Making Industry so decide.

### IT IS WORTH IT.

Two of the most important questions that we have to answer, and two that present themselves with astonishing frequency are: What does it cost? and, Is it worth it? Both of these questions arise in connection with meetings of the Technical Section. They are, perhaps, the most important factors in determining whether a member will attend, especially in connection with the meeting this month. The program of the meeting and outline of the summer trip has been published in the Technical Section of this magazine and has been sent to all members. There should have been more replies and more of them should have said "yes."

Perhaps the second question has not been sufficiently considered. The first is answered by the time-table and the ticket agent. The second affects both the mill and the man who attends the meeting. There is no question of the worth of the trip to the superintendents and technical men of newsprint mills and sulphite plants. Engineers and chemists are not the whole show in the Technical Section meetings. One of their principal advantages is the opportunity for them to meet superintendents and managers and each get a better appreciation of the problems of the other. This, of course, can not be fully accomplished by the addresses that must be arranged beforehand, nor yet from the discussions that follow, but the personal remarks from friendly conversation gives one the benefit of the experience of others. The suggestions made and gathered in this way go far toward making our industry the success it is today and the extension of these opportunities will be an important factor in developments of the future.

The hospitality of Price Bros. & Co., in entertaining the Section at their mills and the courtesy of the Ha! Ha! Bay Sulphite Co., in extending an invitation to visit their mill are important marks in the growth of the idea that progress is made by being open-minded. At Ha! Ha! Bay (St. Alphonse) is one of the newest

pulp mills in Canada. High grade, easy bleaching sulphite is produced. Price Bros. are noted for having one of the finest newsprint mills in Canada—and no other country has better. Considerable improvements in the plant have just been made. A new digester was finished a few weeks ago, and there will soon be installed another one of those Walmsley wonders. Behind all this is a fine forward-looking organization. A visit to such plants is an inspiration that means dollars to your company and satisfaction to yourself. Don't miss it!

We have not said anything about the program of papers and discussions planned for the business session to be held on the boat. This in itself is a novelty. The topics are of interest and importance. Price Bros. are sending a delegation down to escort the party from Quebec.

What does it cost? \$26.75 return trip from Montreal.

Is it worth it? It certainly is.

"Can I afford it?" you say. You can't afford to miss it. It will refresh both mind and body. Wire your intentions to the Association office, or you will not get a berth. You must also remit the price of the ticket.

### COBWEBS.

Why not take everything else the ex-Kaiser has and leave him his life, to be lived in exile? It is of no use to anybody.

Advices from England intimate that there is a good field in France and Britain for Canadian pulp and paper machinery.

"Chemists qualified" read a newspaper headline. Imagine our feelings on learning the reference was to an examination in pharmacy.

Bleachers, attention! Better save up that hydrogen from the electrolytic cells to supply the trans-Atlantic airships. Another waste put to use.

Does President Wilson's veto of the bill abolishing the idea of daylight saving forestall another such comedy of error as took place in Ottawa last spring?

The Pulp and Paper Association trade mark will soon be recognized by British customs officers as a card of introduction. Our goods are all the trade mark stands for. Merchandise must be marked "Made in Canada."

Welcome rains put out the forest fires in Ontario. But the rain will not rebuild those settler's cabins, nor return their possessions, nor restore the timber that sheltered them from winter winds and provided work and a source of income.

# Destruction of Wood and Pulp by Fungi and Bacteria

By PROF. S. F. ACREE, New York State College of Forestry.

One of the most important subjects, from the Canadian point of view, that was discussed at the summer meeting of the Technical Association of the Pulp and Paper Industry at Buffalo on June 12, was the address of Prof. Acree. Notes on a preliminary investigation of a similar nature, by W. A. McCubbin, of the Canadian Laboratory, were printed in the *Pulp & Paper Magazine* for May 15. The present contribution indicates the monetary value of applying scientific knowledge to the industry. It would not be surprising if investigation shows the need of going to the forest and cleaning out the weeds and rubbish, the dead, infected timber and the slash.

## Afternoon Session, Thursday, June 12.

Work of this kind is conclusive of the wide field of scientific research in the pulp and paper industry. Each mill cannot have a trained pathologist, but there is no excuse for not being able to appreciate his services.

### Destructive Action of Fungi on Pulpwood.

Professor Acree spoke without notes but illustrated his subject with charts, showing the extent of loss in wood and pulp from the development of fungi and bacteria. He explained the action of fungi on cellulose and other constituents of wood, and demonstrated the seriousness of the situation. This version of his address is taken from the stenographic report, as published in "Paper," the organ of the Technical Association.

Pointing to charts on the wall. Professor Acree said:

We attacked the problem in two ways. First we took some badly rotted wood and we analyzed it and the sound wood to see the result. In the first case we have spruce (indicating charts on board.) We have in this first table a grouping of the constituents of wood, just roughly, in two groups, pentosan and methyl pentosan. In the sound wood we have 14.88 of methyl pentosan, in the rotted wood 11.18; 58% of the cellulose content in the sound wood, and only 41.71 per cent—weight per cent this is—cellulose, partly destroyed, 20 per cent of lignin, 20 per cent of the wood partly destroyed.

Now, let us see what we get on the equal volume basis. That is the real basis we have to take to see how much cellulose is destroyed in a given block of wood. Now, on that basis we find the following: out of 14 per cent pentosan there is only 3 per cent left; out of the 58 per cent of cellulose in the original block of wood only 13 per cent is left. A great part of the cellulose has been destroyed. Out of the 27 per cent of lignin only 6.74; 75 per cent of the wood has disappeared—practically 75 per cent. Those figures will vary depending on the length of time the rot has developed; but that illustrates what the fungus does in destroying wood. In a block of sound wood you will get 58 per cent of its weight as cellulose. If it is rotted you will get only 13 or 14 per cent. There is a loss to you, then, in that wood.

Let us take a sample of the wood to see what the fungus can do. In the sound wood we have 28 per cent of pentosan and methyl pentosan. On the dry-

weight basis only 23 per cent and on the equal-volume basis only 9; in other words, 9 out of 28 left, practically 19 out of 28—two-thirds destroyed. Your cellulose made up 58 per cent of the original sound wood. It makes up 48 per cent of the weight left after rotted, which means practically 20 per cent of the original cellulose left; 30 per cent out of the fifty has been destroyed. The same holds good for lignin. The 20 comes down to 8 in the rotten wood; 62 per cent of that wood practically has been destroyed by fungus.

Now, here is a table giving a little more of the details of these analyses in that we divide up the so-called groups into the things which are extracted by alkali, cold or heat, the acid hydrolysis and methoxyl group, and so forth. Now, here is the original sound wood with a gravity which we will call 1. Now, the following figures were obtained at two, six and twelve months. This bottom figure is the ratio of the sound to the rotted wood. In two months the ratio of sound wood to rotted wood is 1.4. This means that practically one-third of that wood has disappeared in that short time. There (indicating) it is 1.5 for six months. At the end of the year practically half your wood is gone in this particular experiment. Now, these experiments were carried out under conditions which were similar to the wood pile found in nature; so that we believe that the laboratory experiments correspond very closely with what I have shown you above as to the conditions found in nature itself when you take the rotted material and analyze it.

Now, take the cellulose. Original wood contains 54 per cent, you will see, of cellulose; after two months 36 per cent of the cellulose only is left; six months 33; twelve months 26; half of the cellulose has been destroyed by fungi in that time in the rotting of the wood. The cellulose is the main thing you are after, and you are losing a valuable product there.

Now, in the next table we have nearly the same conditions. We will not go into these tables too much in detail because we haven't time. Here is the analysis of the spruce which we rotted under the conditions found in nature: in the original wood we have 58 per cent; then only 41 per cent; then 13 per cent here (indicating) on the equal-volume basis; in other words, practically 14, we will call it—14 per cent out of your 58 is left. The remainder has been destroyed by the action of these fungi. I could go through these other constituents in the same way. The methoxyl group, which gives wood alcohol, has been destroyed to 75 per cent of the original amount present; the acetic acid which we get under the term "acid hydrolysis" has been destroyed to the extent of 80 per cent. The cellulose has been destroyed to the extent of 76 per cent of the amount present originally; the methyl pentosan 65 per cent, the pentosan 77 per cent. Now, things are formed from those, that are partly gases and they are partly material soluble in alkali and so forth; so these materials which are formed from the cellulose increase in amount and we have an increase in these figures (indicating); in the hot water soluble 146 per cent. That means in the end you have 146 per cent more than you had originally; so it in-

creases up this list with the exception of one or two things. In other words, the methoxyl group was destroyed by these fungi, the valuable materials which you will probably use both as cellulose and as materials from the liquors. They are all destroyed to the extent of 60 or 70 per cent, depending upon the length of time that the rotting takes place.

After the wood is brought into the yard it stays there a given length of time, and is rotting part of that time, depending upon where it is infected. At one place in your yard more rotting will take place than at others. At one place you may not get so much fungi and at the other parts of the plant you will have a great deal of rotting, as the men have told me by letter and by word of mouth.

This wood, if you are going to make groundwood pulp out of it, is ground up, and some of these fungi go along with this ground pulp, which goes into the pulp and you put it in the storage, and under certain conditions of storage the fungus acts very vigorously. Some of your mills are storing pulp under conditions which are not favorable to fungi, and you do not have much loss. In the lap you will have a black or red spot appear. The spot is brought about by the action of both bacteria and fungi. You can look at a lap like that and see the discoloration, which is chiefly red. Another is black. These little photographs will show. For instance, No. 1, a lap of woodpulp; No. 2 is a photograph of the same kind of pulp, made at the same mill; but which has rotted through storage; and those two go along side by side.

Now, you will notice a red circle along one of those red spots. A little statement on there will tell you that this next photograph is an enlargement of a little black spot in the red circle, and you can see this much better than you can in that photograph. Those little black spots are fungi, shown here in a very large photograph. These are the little solerotia that grow into the pulp (indicating). You can see just what these black spots look like when you magnify them highly, and you can see they are the fungi destroying your pulp in storage.

Now, very few of these fungi have been identified and studied. It is a comparatively new field. The United States division of Forests and Pathology has gone as far as it can in these studies, but has not been able to go very far into the habits of these fungi to any great extent. Those diseases, however, are destroying your pulp not only in weight but in the strength and color, and so forth, with which some of you are thoroughly familiar.

Now, I have here two sheets of paper, one made from sound pulp from a given company. This yellow sheet was made from some pulp which did not look very bad. It does not have very many black spots on it, and does not look bad. But the strength test on these shows that the pulp there (indicating) is several times as strong as this partially rotted pulp. You can pass these around and see the color, strength, etc.

In other words, gentlemen, you cannot tell from the number of spots on that infected pulp just what that strength is going to be because the pulp is rotted and gives colorless, or white, indications, and you get the red substance. So it is the red plus something else that gives you the undesirable things and that very great decrease in strength.

We carried out these experiments ourselves in company with one of the large companies, whose name

I will not mention. We wanted further to see what the real status of this thing was in the industry. We sent out questionnaires to find out what they considered the magnitude of the losses due to this rotting. The answers were astounding. The reports come back to us in a large majority of the cases, that so far as they are able to determine, they lose from 5 to 10 per cent of the wood through the rotting; that is, there is a decrease in the pulp from the wood of 5 to 10 per cent through that rot; but even after the pulp is made, that groundwood pulp will lose in strength, through decomposition caused by the fungi and bacteria, from 10 to 20 per cent very easily, and some firms have reported 50 per cent loss in strength of their pulp. That simply means, gentlemen, that you have to use that much more to get a good strength in the paper.

The consensus of opinion, then, is that from 10 to 20 per cent of the strength of your ground wood pulp is lost through this. That means an annual loss to your industry of from five to ten million dollars. If not a little bit more. Some of the men figure even more than that; but you see that that is a very large loss through these diseases.

Now, these diseases can be controlled by the proper sanitary methods developed by the plant or the forest pathologists, the men who are used to working with these fungi and bacteria that destroy these cellulose materials. This red rust we started to work on recently and we found that we can actually make a culture of it. We cannot culture all of these fungi because we do not know how yet. You probably know that it is why the "blister rust," which has come into this country recently, cannot be cultured, because we do not know the methods; and the government has said that the man who learns to culture this rust will have a name forever.

Now, we cannot culture all these and know how they grow under the best conditions and prevent that growth; but this red rust we find we can culture. Here is a little dish in which we have grown some of the red rust on some of the pulp, and you can see the little red spot in there, which is very distinct. You see that has been growing for some time. Now, here is another that has not been growing so long; but you will see those dark spots beginning to appear; in other words, the red rust is actually growing here on this, and in a little while it will be a darker red, just like that one spot you saw there.

Work has been carried on to see if we cannot find conditions under which we can prevent the growth of wood-destroying fungi. There are a number of these fungi—four or five or six—that we know destroy cellulose and cellulose materials under certain conditions, and we have been trying to learn the nature and habits under which they grow, to see if we can prevent them; and we have found in some work which will be published in the near future, but which has not yet been released for publication, that by comparatively simple chemical treatment we can inhibit the growth of these fungi and prevent the destruction of these cellulose materials. We believe that these conditions which prevent the growth of the fungi are so simple that they can be applied to the pulp in storage, so that you will largely prevent the losses in this pulp, for example, by these fungi.

#### Funds Needed to Investigate the Disease.

Professor Acree closed his talk by stating that the Bureau of Plant Industry of the United States De

partment of Agriculture was keenly alive to the necessity of checking the ravages of the fungi and bacteria that attack wood, but there are no funds available. If an appropriation could be obtained an inspector could be sent to the mills to inspect wood piles and stored pulp; take specimens and determine the nature of the bacteria and show millowners how to prevent losses from this source.

#### Summary of Professor Acree's Statement.

Professor Acree's argument may be summarized as follows:

The wood and pulp become infected with cellulose-destroying fungi and bacteria, which rot or destroy 75 per cent of the cellulose, pentoses and other constituents. Chemical analyses of the wood before and after it is acted upon show that the same kind of changes are produced by pure cultures of fungi under laboratory conditions similar to those in the plants. Strength tests on paper made from uninfected pulp, and from the same pulp after it is attacked, by "red rot," show that the infected pulp may have less than 25 per cent of its original strength. This "red rot" has now been grown artificially on ground wood pulp. Photographs have been taken of fungi causing the rot in the stored pulp. A questionnaire has brought out that several million dollars are lost annually through these losses in wood pulp and in power. Congress and the States appropriate annually about \$5,000,000 for fighting crop diseases and losses caused by bacteria, fungi and insects. It is urged that the pulp and paper industry take concerted action to secure legislation by Congress and the interested States and necessary appropriations, to study the nature and habits of the fungi and bacteria causing the decay of pulpwood and woodmolds and to devise and put into application the proper method of control.

#### Discussion of Professor Acree's Address

Discussion of Professor Acree's address was invited by the Chair and O. L. E. Weber inquired whether the fungi or red rust originated in the wood itself or made its appearance later through some development in the pulp and whether their growth was traceable to the cellulose or constituents of the pulp or to the water used in the manufacturing process.

Professor Acree replied by saying that the fungi sometimes were found first in the wood and in other cases the bacteria. Sometimes they are found side by side. The fungi and bacteria existed on the cellulose and they could be classed as cellulose-destroying fungi.

As to the water, in some cases a given water was found to retard or altogether prevent the growth of fungi but in some districts the particular water was found to aid their growth. As to wood storage conditions, it was found that some fungi grow best in tight piles and others in piles of looser construction. The first thing to do was to study conditions, to determine the definite nature and habits of the parasites before starting on a plan of exterminating them.

The discussion closed with the adoption of a resolution asking the Federal Government to appropriate \$250,000 to the investigation of this problem.

Argentina is the first nation to ratify the League of Nations' covenant. If they come in alphabetical order, the United States will be very near the last.

#### POWER FOR NORTHERN ONTARIO.

For years past the full development of the natural resources of the Thunder Bay District, on the north shore of Lake Superior, has been more or less hindered by the lack of power for industries. The pulp and paper trade has especially felt this hindrance, which has resulted in the compulsory exportation of much pulpwood in the raw state which might well have been handled through all its stages in the immediate district. Now, however, this lack of power is being remedied. The development being made by the Hydro-Electric Power Commission of Ontario on the Nipigon River is fraught with great possibilities to the pulp and paper industry. The preliminary work was begun last summer, and the construction work is now well under way. It is announced that the first delivery of power for industrial purposes will be made early in 1920.

The pulpwood resources of the Nipigon district are practically immeasurable. In the adjacent Townships of Nipigon and Booth it is estimated that there are about 500,000 cords, while east and west of these townships are large tracts of splendid pulpwood country. Near at hand are the two large timber limits of Black Sturgeon River and Pie River, the one covering 930 square miles, and the other 1,400 square miles. A great deal of this country has never even been properly cruised, but the wealth of the region from a timber point of view is indisputable.

For some years past there have been considerable annual shipments of pulpwood from Nipigon, most of it going across Lake Superior to feed mills in the United States. The output from the Nipigon harbor this summer will, by a conservative estimate, be about 25,000 cords.

The town of Nipigon, with its magnificent harbor, is only twelve miles from the site of the new power plant, and will therefore have easily available an ample and cheap source of power. The harbor is well sheltered, with good access to the main body of Lake Superior, and will accommodate any of the freighters which sail the great lakes. The railway facilities include two trans-continental lines — C. P. R. and C. N. R.—the main line of both of which pass through Nipigon. A branch line now being constructed by the C. N. R. will connect up with the T. C. R. north of Lake Nipigon, while the C. P. R. are contemplating a cut-off which will give closer access to Winnipeg, with Nipigon as the connecting point.

On several occasions Nipigon has served as the port of entry for the railway enterprises of the region. To-day it is a little village of two hundred population, but the advent of power bids fair to work great changes, and to convert it into one of the most important shipping and industrial centres of Northern Ontario. An energetic campaign is being promoted by the Nipigon Industrial Commission, with a view to informing the public of the facts of the case, and of pushing forward the development of the natural resources of the district.

Forest fires destroyed more than 300 acres of Crown timber in New Brunswick and 30 million feet of timber in Alberta. Many other fires are reported throughout the Dominion. Who pays the piper? The people of Canada, you and I.

## Transportation Information

### Prepay Freight to Save Exchange.

The situation regarding available space on ocean freighters is still disappointing to Canadian exporters. The United States Ministry of Shipping is again requisitioning 75 per cent of the space on cargo ships 30% for commercial traffic.

Canadian exporters issued on the 1st of July the practice of paying for inland bills of lading to foreign destinations has been announced in this magazine a few weeks ago. Under the new arrangement all inland charges must be prepaid the same as heretofore, but ocean charges may go forward collect. The bills of lading, however, are being stamped with the following clause:

"When freight and charges are payable on arrival of goods at destination in exchange for Delivery Order the amount to be paid in Sterling is to be computed at current rate of exchange for which Barker's short-sight bills New York on London can be bought on the day the vessel is entered at Customs House at port of discharge."

This means of course, that the current rate of exchange will be added to the already high ocean freight rates, and arrangements will no doubt be made by many of the exporters to prepay both the inland and ocean freight charges in order to save the exchange.

### No Drop in Demurrage—Cars Scarce.

The Board of Railway Commissioners, at its sittings at Ottawa on July 5th, declined to take any action towards reducing the present car demurrage rates.

The Board pointed out that the action of the United States Government in prohibiting the export of grain of Canadian origin via U.S. Atlantic Seaboard ports, would mean that a great many cars will be required to haul the grain to the Canadian seaboard. It was stated that heretofore 62% of the grain exported from Canada moved to Buffalo, principally by boat from the head of the Lakes. Owing to the action of the United States Government, most of this grain will now have to move in cars from either the head of the Lakes or Georgian Bay and Lake Huron ports. Indications are therefore that Canadian shippers will have to contend with a severe car shortage during the coming fall and winter. Canadian lines have already placed embargoes preventing the loading of their cars to U.S. points, which means that the pulp and paper mills will have to depend almost entirely upon American owned cars to take care of their shipments to points in the United States.

—G. P. R.

### "THE TWELVE BIG PRINCIPLES."

- The value of time
- The success of perseverance
- The pleasure of working
- The dignity of simplicity
- The worth of character
- The power of kindness
- The influence of example
- The obligation of duty
- The wisdom of economy
- The virtue of patience
- The improvement of talent
- The joy of obligating. (Selected.

of happiness—a good night's sleep, a hard day's work, three good meals, and a cheerful home.

### WHY HARMONY PREVAILS AT GRAND'MERE.

The parish priest is the sole arbitrator in cases of disputes between the company and its men, representatives of the Laurentide Company and its employees told the Industrial Relations Commissions at a hearing at Grand'Mere last month. The witnesses who gave evidence were George Cahoon, Jr., who testified on behalf of the company owning the mill, Joseph Deslaurier, a carpenter, F. J. Gauthier, for the employees, and Father LaFleches, who decides the disputes.

Mr. Cahoon said that the company employed 1,700 men. By a raise since given the minimum salary paid would be \$3.50 a day. The men had received a fifty per cent. increase since 1914 and the increase in the cost of living in Grand'Mere had not gone up so rapidly. The company itself owned seventy houses, which it rented to employees on six per cent. of the cost. Clubs for athletics and amusements were also maintained. After a strike over ten years ago, when its men belonged to the International Union of Paper Makers, it was decided to run an open shop, leaving to Father LaFleche the right to decide on disputes the men and the company could not settle themselves. The company maintained a housewives' league and it kept tab on the cost of living. The men's wages were raised to meet the increasing cost of living from time to time.

The wage and hour schedules of the company's men were, Mr. Cahoon said, the same as the union demanded. The employees did not work the eight hour day, but preferred the nine hour day, which meant more money.

Mr. Deslaurier said all the employes of the mill were satisfied. He himself had worked for the company for thirty-one years. He belonged to the International Union of carpenters ten years ago, but did not bother about it any more.

Mr. Gauthier said he worked eight hours. Nobody in the plant would listen to any labor leader who tried to organize a union.

### Priest's Statement.

Father LaFleches said that every time he had asked for something from the company for the men they got it, he considered their claims very carefully and not entitled to. He thought the men were well paid he never asked for something he felt the men were and stated that any man who could not live on \$3.50 a day in Grand'Mere must behave badly. Since the International Union disappeared from Grand'Mere everybody lived in absolute harmony.

Asked the question by a commissioner, Father LaFleches said that Mr. Cahoon was not a Roman Catholic.

Donnacona is in a similar position in regard to union labor. On the other hand there are many mills in Canada and the United States with strong locals where harmony and co-operation is quite as marked. The peace of the community depends on the spirit of the men and the management. The only cure-all for labor troubles mutual confidence and intelligent co-operation.

The sale of Union Bag & Paper Co.'s shares in New York last week at 99 was interesting to many Canadians, since that company owns 75 per cent of the stock of the St. Maurice Paper Co., at Cap. Madeleine and uses the sulphate pulp made in their mill.



## Notes on the Cooking of Rags

By C. NEGRI.

For the cooking of rags we have at our disposal three agents—namely: sodium carbonate (soda ash), caustic soda and lime. In order to render an accurate judgment on the merits and drawbacks of each agent it is necessary to know what happens during the cooking process when employing either one of them.

The carbonate forms with the fats, the resins and the oils, water-soluble soaps and serves to eliminate the animal albumin and the sizings. It has but a feeble action on the colors and incrusting substances. It is therefore well suited to white linen and cotton.

The caustic soda has a more energetic action than the carbonate and removes all incrusting substances, forming water-soluble compounds. It eliminates the oils, the fats, the glues, albumin, the sizings and part of the colors, and it is therefore advisable for semi-white rags, cordage, etc.

The lime attacks the increasing substances, but dissolves them only in part; with the starch, albumin, the oils, the fats and the resins it forms water-insoluble precipitates which cling tenaciously to the fibres, from which it is impossible to remove them even by means of prolonged washing. This drawback reacts detrimentally in the bleaching operation, for the precipitates mentioned form a kind of an impervious coating on the fibres and in consequence of it the bleaching agent does not come in direct contact with them. Moreover, the presence of lime soap interferes with the prompt absorption of the ink and the lesser consumption of resins in papers made with soda cooked rags must be taken into account of the economical consideration. However, the lime is very well adapted for the decomposition of numerous coloring stuffs.

It is notorious that the fibre is attacked by the lime, while the soda gives a much better pulp. Thus, in order to obtain a good grade of bibulous paper, the absolute absence of calcareous soap is imperative. So, too, for cigarette paper, because its combustion would give off a most disagreeable smell. The solubility ratio for lime is: 1:800 in cold water; 1:1,500 in boiling water; 1:1,800 when cooking at a temperature of 134° Cent.

From this it will be remarked that lime is more soluble in cold than in boiling water. Supposing then, that a boiler is charged with 10 quintals (1,000 lb.) of rags, 8 per cent of lime (80 kilos or 176 lb.) and 10,000 liters (2,641 gals.) of water, the quantity of lime coming into action is

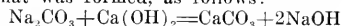
$$\frac{10,000}{1,800} = 5\frac{1}{2}$$

kilos (12 lb.) When the 5½ kilos are partially exhausted, new quantities, taken from the remaining 74.5 kilos pass into the solution. The employ of an excess of lime is therefore unwarranted, except when the amount of water for the solution can also be increased.

Taking up now the economical consideration, I recall the experiments of Herman Schultz, which have

brought out that when 6 per cent of lime is used, the operating cost is limited to 30 centimes per quintal (100 lb.) of rags, while the equivalent amount of caustic soda holding 75 per cent of Na<sub>2</sub>O (sodium oxide) would bring the cost to Lire 1.05 and to Lire 0.90 (a Lire ½ 19.3 cents) when using 298 percent Solvay soda. As a matter of fact, the economy is but apparent, because, as I have already stated, there are other considerations—namely: the better quality of fiber obtained, the lesser consumption of calcium hypochlorite or any other bleaching agent, and the smaller quantity of rosin to be used in order to obtain a good sizing.

By preparing the caustic soda oneself, an economy of 20 per cent on the selling price can be realized. To this end it is sufficient to mix sodium carbonate, 50 to 60 per cent with previously wetted lime. The sodium hydroxide passes into solution, while a deposit settles at the bottom, composed of the calcium carbonate that was formed, as follows:



The precipitate is washed and the lixivium is utilized for new solutions.

In most paper mills they attempt to simplify the operation by pouring the carbonate and the lime at the same time in the boilers. It has been proved, however, that the calcium carbonate that is formed, settles on the fibres from which it is afterwards very difficult to remove, and this has later on a repercussion on the bleaching process. If this is done with sulphuric acid, these particles are to a certain extent absorbed; on the other hand, if the rags are soiled with oils or fats, instead of soda soap, lime soap is formed, which is insoluble and strongly adheres to the fabric.

As to the temperature to be adopted for cooking rags the only thing is to follow the practice closely, because the theory has not yet given us well defined standards. The influence of temperature on the strength of the fibre is very great. It is well known that with the Mitscherlich method the temperature of 128°, corresponding to 2½ atmospheres, is not exceeded and the fibre obtained is much stronger than that from the Ritter-Kellner method, operating at 149°. For the coarse-fibered rags, therefore, 128° must never be exceeded. Multiplying the pressure by the cooking time and dividing by the number of atmospheres that are to be adopted for the new cooking, an approximate basis can be obtained for the duration of the new operation. For instance, if it was customary to cook at 3 atmospheres for seven hours, and the pressure is to be reduced to 1½ atmospheres, how long must the operation last?

$$\frac{3 \times 7}{1.5} = 14 \text{ hours}$$

On the yield and the quality of the pulp, in addition to the kind of alkaline detergent or cleaning agent, the heating intensity and duration, a certain influence is also exercised by the more or less total expulsion of the air from the digesters, i.e., the eventual transformation into oxycellulose.

In the paper industry all the limes prepared from dolomitic limestone should be excluded, because the magnesia it contains, being completely insoluble, is but a useless ballast.

To sum up, I shall state that it is difficult to fix in a thoroughly definite manner the various percent-

<sup>1</sup>Translated for Paper from L'Industria della Carta, xxii, 4, p. 47

ages, the kind of bleaching agent, the duration and the operating intensity for every grade of rags, because all this varies from plant to plant; however, it is possible to set down some general rules.

Lime should be used only for low priced rags, and for the colored ones.

On the contrary, soda is suited for white rags, new cuttings containing sizes, for the semi-white rags, for paper and oil or grease-soiled materials, in short, for any stuff that is to be turned into pulp for fine or middling papers.

From the economical standpoint, the material price of the agent employed must not be taken into account alone, but also all the advantages and the yield which such a substance could offer.

I had occasion to perform some experiments in two of the most important Italian paper mills during the one year of practice I engaged in before I attended the school of Prof. Cav. Camillo Levi. Without dwelling on the particulars, from a justifiable reserve, I may say, however, to have determined that the difference in price between the use of lime and that of soda is very small, and that it is financially compensated by the better quality of the fiber that is obtained by cooking with soda. On the other hand, a very active vigilance is required by the producer of middling pulps, in order that the economy in the bleaching may be properly attained.

#### CONFER WITH MR. BALLANTYNE.

On July 11th, representatives of the pulp and paper industry waited upon the Hon. C. C. Ballantyne, Minister of Marine and Fisheries, in Montreal, and discussed with him the possibility of getting additional freight space at reasonable rates for pulp and paper shipped from Canada to Great Britain. The Minister explained the situation and said that he was unable to hold out any promise of immediate betterment. He said, however, that while the Government's merchant marine was entirely within the control of Mr. D. B. Hanna, and that the Government would under no circumstances attempt to interfere with Mr. Hanna's operation of the ships, he would, if given proper data, take up the case of the Canadian pulp and paper exporters with Mr. Hanna, with a view to meeting our requirements.

The Minister asked the delegation to supply the following information:

(a) Names of companies with pulp or paper to export;

(b) Quantity ready for shipment and where located;

(c) What rate shippers, having in mind the present scarcity of tonnage, the high rates prevailing and the fact that for every ton of space available several times the amount of freight is offered, are prepared to pay.

It was immediately found that there is ready and waiting for shipment, from Montreal and other eastern points, 12,000 tons of groundwood, 1,000 tons of sulphite and 4,000 to 5,000 tons of newsprint and board. The Minister was informed of the rates that shippers could afford.

While the British Government has a very tight grasp of most of the shipping space from Canadian ports and does not seem disposed to release it, there is hope that some outlet can be arranged for pulp and paper that consumers on the other side are anxious to get.

#### R. S. WALDIE, IMPERIAL BANK DIRECTOR.

R. S. Waldie, recently elected a director of the Imperial Bank of Canada, is vice-president of the Victoria Harbor Lumber Company; president and managing director of the Toronto Paper Mfg. Co., and vice-



president of the Magnatetwan Tanning & Electric Company, Ltd. He was born at Burlington, Ont., in 1887, and was educated at Upper Canada College, Toronto University, and at Osgoode Hall. He began the practise of law with Meredith, Cameron & Waldie, Toronto, in 1903.

#### SAFETY WORK PROGRESSING IN NORTH.

A. P. Costigane, Safety Engineer of the Ontario Pulp and Paper Makers' Association, Toronto, returned recently from holding a series of successful Safety rallies in Sault Ste. Marie, Espanola, Sturgeon Falls, and Dryden. The pictures entitled "The House that Jack Built," and "Careless America" were shown at all these points and the attendance in each centre was very large. Mr. Costigane delivered brief but instructive addresses to the employees of the mills and their families, and reports that much interest is being taken in the work.

At Port Arthur it was not possible to hold a Safety rally in a local theatre, owing to the fact that no could not be secured. There is only one moving picture theatre in the city and the proprietor would not lease his place of amusement for love or money. At Espanola and Sturgeon Falls the children of the public and separate school were present in large numbers and took much interest in the film, "The House that Jack Built." The Spanish River News, which is published at the Soo, is following up the good work done by Mr. Costigane, by holding a "Safety First Essay Contest," for which prizes are being offered to those in the Fourth, Third and Second Classes, the competition being open only to children of employees of the Spanish River Paper Mills at the Soo, Espanola and Sturgeon Falls.

Mr. Costigane left this week for Iroquois Falls and Smooth Rock Falls, where he will hold further Safety Rallies and moving picture exhibits. He has moved his office in the Dominion Bank Building, Toronto, from 306 to 305 on the same floor. After his return from the North, Mr. Costigane and family will spend a holiday on Lake Simcoe near Barrie.

## Encouraging Progress with Preparation of Textbooks

The Secretary of the Joint Executive Committee is sending to individual subscribers to the Textbook Fund, a report of progress. Canadian contributions were made as a part of the budget of the Association and paid by regular assessment. They, too, will be interested in the editor's report. Considering the size of the effort and that work could not actually start till late in February (although preliminary organization was accomplished) the progress made seems very encouraging.

The following is a brief statement by the editor of the present status of preparations for the material to be used in the text book which is to be published under the auspices of the Technical Association of the Pulp and Paper Industry and of the Technical Section of the Canadian Pulp & Paper Association.

*Scope of the Work.*—This has been outlined in the Technical journals and has been distributed in pamphlet form by the Secretary to the gentlemen on the executive committee on Vocational Education. It will consist of 4 volumes each approximately of 500 pages, which will cover the topics as mentioned in the following paragraphs, which will also give the name of the author and the approximate number of pages for each section.

### Volume 1. Preliminary Instruction:

Arithmetic by J. J. Clark, Scranton, Pa., about 150 pages, practically finished.

Mathematical applications (mensuration, special problems, etc.) about 100 pages, by J. J. Clark, practically completed.

Elementary Chemistry by T. L. Crossley, about 100 pages, more than one-third completed.

Elementary physics, about 60 pages, by E. J. Graham, Hawkesbury, Ont.

Mechanics & Hydraulics, about 60 pages, by E. J. Graham.

Elementary Electricity, about 60 pages, by J. S. Riddle, Grand Mere, P.Q.

### Volume 2. Preparation of Pulps.

Preface: Outline of the character of the work and a brief summary of pulp history.

Introduction. Importance of wood. Lopping operations, etc. Distribution and properties of wood. Other substances for pulp making; partly prepared. Section 1, Wood Preparation, about 32 pages. Section 2, Mechanical Pulp, 48 pages. Section 3, Sulphite Pulp, 96 pages, by B. Johnsen, Erie, Pa. Section 4, Soda Pulp, by A. B. Larchar, Old Town, Me., 96 pages, partly prepared. Section 5, Sulphate Pulp, 48 pages, by Elis Olssen, West Point, Va. Section 6, Treatment of Pulp, 48 pages, by J. O. Mason, Grand Mere, P.Q. Section 7, Bleaching of Pulp, 32 pages, by H. H. Hanson, under way. Section 8, Analysis and Testing of Raw Materials and Pulp, 64 pages, by Max Cline, practically finished.

### Volume 3. Manufacturing of Paper:

Preface: Scope of the Volume and the brief history of Paper Making.

Introduction: Fibres and materials other than wood and their sources by Howard Atterbury, N.Y.

Section 9, Preparation of Rag and other Fibres, 96 pages by E. C. Tucker, Holyoke, Mass.

Section 10, Treatment of Waste Papers, about 48 pages.

Section 11, Beating and Mixing, 96 pages, by A. B. Green, Erie, Pa., well under way.

Section 12, Engine Sizing, 32 pages, by J. A. DeCew, New York.

Section 13, Coloring, 32 pages by Otto Kress, Madison, Wis.

Section 14, Loading, 16 pages.

Section 15, Paper Making Machines, 175 pages, by J. W. Brassington, Wilmington, Del.

### Volume 4. Manufacture of Paper (Continued):

Section 16, Paper Making, 16 pages by R. O. Harper, Housatonic, Mass., under way.

Section 17, Finishing Operations, 48 pages, H. J. Guild, Bangor, Me.

Section 18, Special papers on Boards, 48 pages by separate authors.

Section 19, Paper Testing, 64 pages, by F. C. Clark, Holyoke, Mass.

Section 20, Laboratory Equipment, 16 pages.

Section 21, General Mill Equipment, 90 pages.

Section 22, Trade Customs and Mill Organization, 48 pages.

Section 23, Dictionary of papers, tables, etc.

Special effort is being made to produce the work in logical order, and it is hoped that the preliminary sections will be ready for use by the end of the year. It must be borne in mind that a very large work is being attempted and that unavoidable delays are bound to occur, and that the rate of preparation depends to considerable extent upon the ability of busy men to get time for the preparation of their contributions.

It will be especially helpful to the committee if the members of our Technical organizations and all others connected with the industry who are in any position to do so will co-operate by sending in suggestions to the editor that would tend to make the work more complete and up-to-date. This applies particularly to mills where a process, perhaps for the first time, or where a particular piece of equipment has been found to be of special benefit, and where some wrinkle in improving the daily routine of mill work has been found specially satisfactory.

Such things as washing felts, cleaning wires, lubricating machinery, moving materials, wrapping, loading and shipping, and such matters may contain just the points that are needed to round out the treatment of a particular subject and the editor will be glad to pass on any such information to the author of the section to which it applies.

Another manner in which the industry could do itself a service as well as assisting the committee, is by sending in practical questions in regard to machines and processes and their operation and also of numerical examples which apply to any of the many phases of the industry.

Any such co-operation and suggestions will be very greatly appreciated.

Mr. William Hill, an employee of the Port Arthur Pulp and Paper company, suffered the loss of the bottom part of his left foot, when it was caught by a circular saw at the plant. Hill was rushed to St. Joseph's hospital by the police patrol, and was attended by a local physician.

# Wages in England and Italy

## Paper Mill Wages in England.

United States Consul General W. Stanley Hollis, reported recently from London as follows:

The secretary of the Employers' Federation of Papermakers has advised this office that the rates of wages paid in paper mills in this country vary considerably, according to the class of paper made and the situation of the mills, and that there is no recognized standard for any particular occupation. The federation is on the point of completing negotiations with the Paper Workers' Unions regarding hours and wages, by which adult workers will receive an advance in wages of 2 cents an hour. The working hours of the mills will also be fixed from 6 a.m. Monday to 2.30 p.m. Sunday.

The average wages at present paid for a week of 60 hours in different sections of the federation are given below, the conversions having been made to United States currency at the rate of \$4.86 to the pound sterling:

	North. section.	South. section.	Scot. section.
Machinemen and beatermen	\$18.87	\$18.73	\$15.65
Other classes	12.22	13.54	10.90

Word has just come by cable that the British mills have adopted the 8-hour system, but it may be safely assumed that the wage of the individual worker will not be any less on that account, although no additional increases have been noted.

## High Prices and Low Wages in Italy.

Wage conditions in Italy, as well as prices of some material are given in correspondence from Ing. L. Burgo, of Cartiera de Verzuolo, Verzuolo, Italy:

"I enclose a list of average prices for raw material and wages paid in this section of the country, which is a leading paper centre in Italy; please note that an 8-hour working day is in full force throughout Italian paper mills, since the first of May. The scale of wages may be changed slightly in the forthcoming final agreements with the labor representatives.

The labor problem makes now imperative a more strict accounting than it has now been the rule with us in the past, and thus we hope to be able to cope with the situation.

I would say that the war itself has not damaged our industry as much as the after-war difficulties, particularly in regard to transportation difficulties. As you certainly know, we are dependent on foreign coal and the international situation weighs hard on our coal supplies, both for quantity and quality in a way that we are inclined to resent as unfair. We have now under construction a hydro-electric plant for about 20,000 H.P., and that will help some, though coal is coal, when all is said and done, and we have got to use quite a lot of it.

So while the whole country is pushing ahead with water power developments, our main problem now is, what it has always been, to have coal and ships and to become internationally independent enough to get coal and ships for something less than a Mediterranean fair price."

The prices of some important materials and of labor are as follows:

	Per 100 kilos. Lire.
Lime	3—4
Rosin	140—160
Felts	35—45
Wires	40—60 (square meter)
Sulphite pulp, bleached	120—130
Ground wood	75—80
Alum	65—70

100 kilos = 220.46 lbs. One lire = 19.3 cents. Multiply the number of lire per 100 kilos by .086 to get cents per pound, approximately.

## Wages.

	11 lire a day of 8 hrs.
Machinemen and Beaters foremen	8 " "
Beaters	7 " "
Labourers	5 " "
Women	5 " "

## A Sharp Contrast.

In Canadian and American mills where union labor is employed, wages are practically uniform for the same conditions of employment. Here, too, the 3-tour system prevails, although some non-union plants still adhere to the antiquated 12-hour shift. In France the 8-hour day is a requirement by law and apparently this is also true in Italy. The wages paid in a typical, up-to-date newsprint mill are shown in the following table. It will be seen that maximum production by such highly paid labor is necessary to insure a sale for Canadian paper in the foreign market:

Boss machine tenders	\$1.17 per hour
Machine tenders	.97 "
Back tenders	.80 "
Third hand	.62½ "
Fourth hand	.50 "
Fifth hand	.46 "
Broke hustler	.45 "
Oilers	.47 "
Cleaners	.43 "
Beater engineers	.69 "
Beatermen	.46 "

These men are working on wide, fast machines, while the Italians have apparently no machine over 135". The next widest is in the mill of our correspondent and is 108". Their four machines make 250-300 tons of news and wrapping per week, while the Canadian mill referred to, with two machines, each about 164", makes more than 600 tons per week.

## FOREST BURNING IN CENTRAL IDAHO.

Boise, Idaho, July 15.—The forest fire which has been raging for three weeks in the Yellow Pine district of the Thunder Mountain section, in Central Idaho, threatens to equal in destruction the great fires which swept Western Montana, and Northern Idaho in 1910, when great loss of life resulted.

The fire has wiped out six square miles of timber, and has done serious damage over an equal area. One hundred and twenty-five million feet of lumber was an estimate made today by forestry officials of the loss so far.

If the Americans burn up their western forests as successfully as Canadians are burning theirs, the future of the pulp and paper industry will be in some enlightened country like Korea, Siberia or Russia.

## Textbook Committee wants Assistance

The editor engaged by the Joint Executive Committee of the Vocational Education Committees presents the following outlines of several sections of the Textbook on Pulp and Paper Manufacture, which is being prepared. Similar synopses of other sections will be published as they are received from the authors. What is wanted is a careful review of the topics here presented and suggestions for their improvement, especially by the practical man, superintendent, boss machine-tender, beaterman, head-cook, grinder-room foreman, etc., as the case may require. If some point is left out, say so. If you have some information that may be of service to the author of any section, send it in to be passed along or give the editor a chance to put the author in touch with you. Your help is not only appreciated, but it is needed.

Correspondence may be addressed to J. N. Stephenson, Garden City Press, Ste. Anne de Bellevue, Que.

### OUTLINE OF SECTION ON SODA PULP.

#### I.

#### Introductory.

- 1.—Brief outline of the Soda Process for making wood pulp.
- 2.—Flow sheet or diagram showing the course of the materials through the different stages of the manufacturing and recovery operations.
- 3.—Distribution of mills. Wood used. Size chips, etc.

#### II.

#### Preparing Cooking Liquor.....

- 1.—Materials:
  - a.—Soda Ash (Electrolytic Caustic).
  - b.—Lime.
  - 3.—Water.
- 2.—Tanks.
- 3.—Pumps.
- 4.—Piping and Drains.
- 5.—What takes place when Soda Ash and Lime are boiled together.
- 6.—Liquor Room Practice (Bath system).
  - a. Handling tanks (continuous system).
  - b. Boiling (filtration system).
  - c. Settling.
  - d. Pumping off.
  - e. Making weak liquors or "washes."
  - f. Getting rid of "mud" or sludge.
  - g. Storage of digester liquor.
- 7.—Questions and answers.

#### III.

#### The Cooking Process in a Soda Pulp Mill.

- 1.—Arrangement of digester room.
- 2.—Styles of Digesters.
  - a. Riveted and Welded.
  - b. Vertical Stationary.
  - c. Horizontal Revolving.
  - d. Double shell digesters.
- 3.—Ways of heating Contents.
  - a. Direct heating.
  - b. Injector circulation.
  - c. Pump circulation.
- 4.—Preventing waste of heat from the digester.
- 5.—Blow pits, valves, gauges, thermometers.
- 6.—Digester operation.
  - a. Filling (mention size of ships).

- b. Steaming (mention any variation of wood species.)
- c. Relieving.
- d. Blowing.
- e. Preparing for the following cook.

#### 7.—Questions and answers.

#### IV.

#### How Soda Pulp is Washed.—Purpose of Washing.

- 1.—Tanks.
- 3.—Piping.
- 4.—Pulp canals or sluices.
- 5.—Operation of washing room. "Fire" and "Slow" stock. (Reason for using minimum waters.)
- 6.—Questions and answers.

#### V.

#### The Evaporator Room and what is done in it.

- 1.—Why "Black liquor" is boiled down.
- 2.—Arrangement of Evaporator room.
- 3.—Style of Evaporators.
- 4.—Evaporator room practice.
- 5.—Questions and Answers.

#### VI.

#### Burning and Leaching Black Ash.

- 1.—The Rotary Reclaiming Furnace.
  - a. Other types which have been used.
- 2.—Reason for Burning Black Ash.
- 3.—Rotary Room Practice.
- 4.—The leaching operation.
- 5.—Questions and Answers.

#### VII.

#### The Laboratory of a Soda Mill.

- 1.—How the laboratory helps.
- 2.—Testing caustic liquors.
- 3.—Testing Pulp for Moisture (and color.)
- 4.—General remarks.

#### VIII.

- 1.—Recovery of lime from caustic sludge.
- 2.—Some by-products that are or may be recovered.

### BLEACHING OF PULP.

#### Theory of Bleaching of Chemical Pulp.

- Composition of Bleach.  
 Reactions.  
 Chemistry of Bleaching of Pulp.  
 Control of Bleaching.  
 Effect of Quantity of Bleach.  
 Effect of Bleach Concentration.  
 Effect of Temperature.  
 Effect of Time.  
 Effect of Efficiency of Mixing.

#### Manufacture of Bleach.

- Dry Bleach.  
 Manufacture of Chlorine (very brief mention.)  
 Absorption of Chlorine by Lime.  
 Strength of Bleach (Usual analysis.)  
 Basis of Selling.  
 Preparation of Bleach Solution from Dry Bleach.  
 Electrolytic Bleach—  
 The Chlorine—Caustic Soda Cell.  
 Chemistry of Process.  
 Diaphragm Cells—  
 Townsend,  
 Allen-Moore,  
 Nelson, etc.  
 Mercury Cells,  
 Kastner and Kellner,  
 Whiting, etc.  
 Absorption of Chlorine in Milk of Lime.

Preparation of Lime.  
 Systems of Absorptions.  
   Effect of Excess Chlorine.  
   Effect of Temperature.  
 Settling of Liquors.  
 Hypochlorite Cells.  
 Analysis of Bleach and Bleach Liquor.  
 Available Chlorine Determinations.  
 Measuring and Testing of Liquors.  
 The Bleaching Operation for Sulphite and Soda Pulp.  
   Preparation of Stock for Bleaching.  
   Methods of Washing Stock.  
   Effect of Bleach Consumption.  
 Bleaching Systems.  
   Continuous Systems.  
   Charge System.  
   Bellmer System.  
 Control of Operation.  
   Agitation.  
   Heating.  
   Stock Consistency.  
 Washing of Bleached Stock.  
   Use of Anti-Chlor.  
 Other Methods of Bleaching.  
   Use of Chlorine.  
 Advantages and Disadvantages.  
   Shipments.  
 Bleaching with Sulphur Dioxide.  
 Testing of Bleached Pulp.  
   Strength.  
   Color.  
   Oxy-Cellulose.  
   Resistant Cellulose.  
 Bleaching of Sulphate Stock.  
 Bleaching of Ground Wood.  
 Bleaching of Rags.  
 Bleaching of Old Papers.  
 Bleach Consumption.  
   Kind of Wood Used.  
   Length and Harshness of Cook.  
   Efficiency of Bleaching.  
   Consumption by Soda, Sulphite, Rags, etc.  
 Hazards.

#### BRIEF SYNOPSIS OF SECTION ON PAPER MACHINES.

**Wet Part:** Introductory: Stuff Chests; Sand Traps; Stuff Chest to Flow Box; Head Boxes; Screens, flat and rotary; Fourdiner Part; Rolls, Breast, Table, Wire, Dandy; Suction Boxes; Couches, press and suction; Clothing, wire and jackets; General Data.  
**Press Parts:** Press Rolls; Felt, stretch and guide rolls. Suction Boxes and Felt Whippers. Weights and Levers. First, Second and Third Presses. Smoothing Presses. Felt and Wire Marks. Turning and Washing Felts; General Data.  
**Dryer Parts:** Cylinder, Causes of Trouble, Dangers, Steam Joints, Dippers, Syphons; Circulating Steam Devices; Steam Regulators; Felt; General Data.  
**Dry End:** Calenders, Reels, Slitters and Winders; General Data.  
**Paper Machine Drives:** Variable and Constant Speed Shafts; Marshal Drive, Ferguson Drive, Rope Drive, Prime Movers, Engines, Turbines, Motors, Speed Changes and Speed Ratios; General Data.

**Special Machines:** Harper, Edwardes Attachment; Yankee Machine; General Data.  
**Cylinder Machines:** Vats, Moulds, Control of Dryers, Dry End of Cylinder Machines; General Data.

#### OUTLINE FOR THE SECTION ON TUB SIZING.

- 1.—Tub sizing materials are glue, animal size, starch and casein.
  - (a) Define glue, give source of supply and physical and chemical properties.
  - (b) Define animal size, give source of supply and chemical properties.
  - (c) Define starch, give source of supply and physical and chemical properties.
  - (d) Define casein, give source of supply and physical and chemical properties.
- 2.—Preparation of animal size from hides.
  - (a) Define glue stock.
  - (b) Physical and chemical state of hides before coming to the mill.
  - (c) First operation at mill (soaking for 24 hours.)
  - (d) Washed for twelve hours.
  - (e) Heated at 10 deg. for twelve hours and drawn off.
  - (f) Heated at 185 deg. for twelve hours and drawn off.
  - (g) Heated at 190 deg. for twelve hours and drawn off.
 (Also includes description of apparatus used.)
- 3.—Preparation of starch.
- 4.—Preparation of casein.
- 5.—Description of size tub.
- 6.—Theory of tub sizing.
  - (a) Material soaks into pores of the paper, fills them up, and coats over surface, leaving a film giving
    - (1) Ink resistance,
    - (3) Smooth surface,
    - (3) Leathery feel,
    - (4) Strength of paper.
  - (b) Depending on
    - (1) Concentration of solution.
    - (2) Kind of solution used.
- 7.—Different methods of tub sizing.
  - (a) Once through in regular fashion.
  - (b) Wet winding,
  - (c) Up and down in one size tub.
  - (d) Double sizing.
- 8.—Effect of moisture on paper while going into size tub.
  - (a) A bone dry sheet takes less sizing than a wet sheet.
  - (b) Much moisture is very good, but it produces slack edges and buckled sheets.
- 9.—Strength increase of paper because of sizing.
  - (a) Strength increase of paper when using starch, glue, animal size, or half starch and half glue.
- 10.—When to use glue, animal size, starch or casein.
- 11.—Effect of temperatures of size in tub on paper.
  - (a) Penetrates more easily when size is hot.
    - (1) Temperature 120 deg.-130 deg. F. is normal.
- 12.—Effect of beater time on tub sizing.
  - (a) Stuff a long time in the beater requires less surface sizing.
  - (b) Free stuff takes more tub sizing than slow stuff.
- 13.—Effect of engine size on tub sizing.
  - (a) More rosin size in beater requires paper to take less size in tub.

- 14.—Sizing changes color of the paper depending on
- Quality,
  - Quantity,
  - Strength,
  - Color
- Of the material used in the tub.
- 15.—Animal size troubles,
- Fermentation
    - Corrected by alum, formaldehyde or zinc sulphate.
    - Grease in animal size.
      - Makes uneven surface.
    - Uniformity.
    - Specific gravity increases as water in size goes off as steam.
  - Starch troubles,  
Same as above except for grease.
  - Casein troubles,  
Same as (a).
- 16.—Which needs more tub sizing, rag or wood?
- Under the same rosin and beating conditions rag takes more tub sizing than wood pulp.
  - The sizing varies according to the quality of the wood used.
  - Also varies according to engine sizing and beating time.
- 17.—Surface sizing tests,
- Ink test with steel pen.
  - Tongueing.
  - Test for starch.
  - Test for animal size and glue.
  - Test for casein.
  - Ink bath. Strips of paper floating on ink.  
(Covered in greater detail under "Paper Testing.")
- 18.—Analysis of glue, animal size, starch and casein.
- Glue.
    - Physical properties.
    - Viscosity.
    - Specific gravity.
    - Gel.
  - Starch.
    - Physical properties.
  - Casein.
    - Physical properties.
- (Covered in greater detail under "Analysis and Testing of Materials.")
- Would like more information on casein, who is using it, and for what purpose.

#### A NEW COLOR FOR PAPER MAKING.

A new dye recently announced by the National Aniline and Chemical Company, Inc., Cotton Blue B, is acid blue that will especially interest the silk dyer, the paper manufacturer, and the ink maker. It will also take the place of a blue for laundry purposes, formerly used.

Cotton Blue B can be employed for the bright blue shade required on cotton yarn, where the question of fastness to washing does not enter into first consideration. Other uses for cotton are restricted to twine, and fabric of this character.

As a special dye for paper, it lends itself very well for use in the blueing of bond paper and other high grade papers, for which ordinary types of basic blues do not have sufficient brightness.

Half tones were first printed in newspapers in 1894, by the Boston Journal.

## Lack of Tonnage no Fault of Gov't

Mention is made on another page of this issue of the hearing given to a delegation of pulp and paper men by Hon. C. C. Ballantyne, Minister of Marine and Fisheries. In view of fundamental importance of favorable shipping facilities for conduct of our overseas business and its indirect effect on the whole industry, the following remarks of Mr. J. A. Bothwell, president of the Canadian Pulp and Paper Association, will have special interest.

"Criticism of the Canadian Government because there is insufficient shipping to get Canadian pulp and paper products to the European market is hardly justified by the facts of the situation," said Mr. J. A. Bothwell, when asked what grounds there were for holding the Government responsible for the difficulties which the industry is having in getting its goods into the overseas market. "The pulp and paper industry is certainly greatly hampered by the lack of ships and by the abnormal freight charges for such space as is available, but in that respect it is no better and no worse off than other Canadian exporting industries.

#### Government Sympathetic.

"The Government," continued Mr. Bothwell, "has, through the Hon. Mr. Ballantyne, given a very sympathetic hearing to our case, and has promised to do everything possible to relieve our situation, and I believe it will carry out its promise. The difficulty arises from the fact that Great Britain controls practically all Canadian shipping, except such as is owned by the Canadian Government, which is almost a negligible amount at present. Canadian vessel owners placed their ships under the British registry during the war in order to enjoy the protection of the British Government, and to meet other war conditions. So far all efforts to have some or all of the ships restored to the Canadian registry have failed.

"The British Government wants the ships for its own use, and the Canadian Government, as Mr. Ballantyne frankly told our delegation, is powerless in the matter. The salvation of Canada's commerce, as the Minister also said, lies in building up a Canadian merchant marine, and that will take a considerable time to accomplish. The Government expects to have 20 ships in commission this year, and 50 within two or three years' time, but shippers fear that by that time their present market opportunity will have vanished. Other countries than Canada will have seized upon the trade that this country might have secured had we the facilities at present for securing it.

#### Not Farsighted Enough.

"The trouble with us Canadians is that we didn't look far enough ahead, and begin building ships early enough, and in large numbers. That was probably due to the fact that we had our hands full in carrying on the war, and besides had neither the men nor the means, even if we had had the vision, to enter upon an extensive shipbuilding program at a time when all concerned were concentrated upon the war effort. But if we didn't have these things other countries, much more sorely pressed than ours, did, and to-day they are the ones that stand to benefit chiefly by reconstruction.

"But if the pulp and paper men understand the difficulties of the Government, and are not inclined

to visit upon them the responsibility for their own troubles; we, nevertheless, realize that the situation is one of very great hardship for our industry, as well as a drawback to Canadian trade expansion. In our own industry we are flooded with inquiries from Europe for quotations on pulp and paper products of almost every grade. The Minister of Marine and Fisheries, when inquiring into the situation, asked us for specific information as to what amounts of pulp and paper we had ready for export, where the shippers were located, their destination, and the amount the shippers would be willing to pay for ocean freights, having in mind all the circumstances at present surrounding ocean freight traffic. We were able to give him some information of this character, such as the fact that one Quebec producer of ground wood pulp has over 12,000 tons of pulp lying upon the docks waiting for ships to carry it to England, where it has a market, and has tried in vain for months to secure the necessary accommodation, but the real situation is that the producers are afraid to make contracts with the British buyers, because of the uncertainty as to being able to make delivery. Some, however, are taking orders and are running the chance of being able to get the necessary cargo space.

#### High Freight Rates.

"The high freight rates are also an adverse factor in the situation," said Mr. Bothwell. "There is a differential of between \$8 and \$10 a ton against Canadian pulp and paper laid down in the United Kingdom, as compared with the same class of products exported thence from the Scandinavian countries, our chief competitors for the trade. We understand, too, that American pulp and paper are going overseas with a similar advantage in rates as compared with our own. But this again is a situation difficult to remedy, since we are told that for every ton of cargo space available at any Canadian port from two to six times the amount of merchandise is offered. The Government tells us that when its ships are ready for business, profits on their operation will be made secondary to the question of Canadian trade expansion. This sounds like good policy, but its benefits are too far distant in the future to have any appreciable effect upon our present situation.

"Another thing that militates against Canadian foreign trade expansion is the fact that there are so few things that Canada wants to import from abroad, comparatively speaking. We are practically producing all of our own foodstuffs and the greater part of our requirements in manufactured goods. But ships that leave our ports laden with Canadian goods cannot be expected to come here empty. There has to be reciprocity in trade. A striking instance of this relates to the supply of print paper and pulp now going to Australia. There is no reason why Canada should not supply these commodities, except again the lack of ships; but, as a matter of fact, since the war stopped Scandinavia has been supplying Australia's needs of these things, taking Australian wheat in exchange. Australia has three years' crop of wheat stored up ready for the market, of which she must get rid. Canada, of course, isn't a wheat buying country, and we cannot trade our pulp and paper for wheat."

#### General Outlook.

As to the general outlook for this year's pulp and paper export business, Mr. Bothwell said:

"Our American market continues firm, with a very strong demand. The market for kraft and other grades of wrapping paper, which slowed up considerably when the war stopped, probably in the mistaken expectation of a slump in prices, has firmed up to such an extent of late that the kraft mills some time since withdrew all quotations, and find some difficulty in filling orders. The market for newsprint is also strong, and some producers fear a runaway market may develop this fall, which they would very much deplore, as a stabilized market is the best for all concerned. The American demand for pulp is better than normal. A statement, however, printed a day or two ago, that this year's exports of Canadian pulp would amount to \$100,000,000 in value is somewhat exaggerated. Last year, Canada exported pulps of all grades to the value of \$34,706,771. We may show an increase over that this year, but we have to count upon competition with the European producers, which was non-existent last year. At any rate, prices show no indication of falling, nor will they so long as the present high price of labor, freight and raw materials keeps up.

"Another misstatement going around that needs correction, is that the British paper mills are practically out of business, and that it will take them two or three years to get back to normal production.

#### British Mills on 3 Tours.

"Our special representative in London cables that the British mills have gone to the three-tour system, which means that they are operating 24 hours a day, with three shifts of workmen. At that rate it will take them but a very short time to overtake any shortage that may exist, and any foreign-made paper that gets into England will have to show good cause for doing so. The imperial preference, you may be sure, will not be allowed to operate to the detriment of British manufacturers and British workmen, and there is no reason why it should. Great Britain is under even more of a necessity than we are to keep her industries alive, and to keep as much of her money as possible from leaving the country.

"These, however, are all good reasons why Canadian exporting industries, such as pulp and paper manufacturing, should receive every possible encouragement at home, and why special efforts should be put forth to enable them to maintain and increase their foothold in the overseas market," concluded Mr. Bothwell.

#### MACHINERY WANTED IN FRANCE.

The following inquiry from Edouard Hery, 16 Rue du Rocher, Paris, will interest many of our readers and advertisers. Replies may be sent direct to Paris, or through the Pulp and Paper Magazine. There are other openings also:

"Dear Sir.—We actually receive a great number of inquiries for various machines, such as:

- Envelope making machines,
- Bag and sachet making machines,
- Machines to make folding cardboard boxes and tubes,
- Machines to make corrugated cardboard,
- Machines to make toilet paper rolls,
- Wire stitching machines,
- Gumming machines,
- Bindery machinery, etc.

We should feel obliged to you if you would give us addresses of some firms interested in the export of their material."



# UNITED STATES NOTES

The Arnold bill, imposing increases of nearly 400 per cent on income, recently passed by the Wisconsin State Senate, met with overwhelming defeat when it came to a vote in the Assembly. The measure was solidly opposed by practically every commercial organization in the State, led by paper manufacturers and other representatives of the paper industry. It was asserted by those protesting against the bill that the effect of its enactment would have been to drive many manufacturing institutions from the State.

Producers of chemicals look upon recently placed orders for bleaching materials in large quantities by paper mills as a hopeful sign. They report greater activity and firmer prices in chemicals, and see in the demand of the paper mills prospects of an early return to normal business conditions.

A ten acre tract of land located near the Drainage Canal on the Chicago River has just been acquired by the Mendelson Brothers Paper Stock Company, of Chicago, who plan to erect immediately upon part of this site a large modern warehouse. \$400,000 will be needed to build this structure, which will contain about 200,000 square feet of floor space. According to present plans, this building should be ready for occupancy by November 1. The remainder of the land will be improved by the Mendelsons in the near future to take care of their paper and paper product lines, plans for which are now being formulated. When all the projected improvements have been made it is expected that in the neighborhood of \$2,000,000 will have been expended. The Mendelson interests and connections are large operators in paper stock and paper mill supplies, having a large plant in St. Louis and connections in all the larger cities of the country.

The International Paper Company has declared its regular quarterly dividend of one and one half per cent on the preferred capital stock, payable July 15, 1919.

While a number of paper manufacturers are understood to have signified their intention to comply with the requirements of the Federal Trade Commission in connection with the so-called misbranding case, it is not at all unlikely that many of the larger concerns will hold out and fight the case before the commission. A stipulation to the effect that they will not use certain terms, against the use of which the Trade Commission is opposed, may be signed within the next few weeks by those manufacturers who are in favor of a settlement in line with the commission's suggestions. It is said that the commission is being asked to withdraw its objections to the use of the word "bond." Other terms brought out at the recent hearing, which will no doubt be insisted upon by the commission, are believed to be acceptable to the manufacturers.

The St. Regis Paper Company's mill at Deferist, N.Y., recently established new records for production in a single day. On Tuesday, July 1st, a grand total of 170 tons of paper was run over the mill's four big machines. This record was almost reached on two other days of the same week, when 167 tons were rolled off.

Jacob de Julin, president of the Commercial Mission of the Government of Finland, and president of the Finnish Cellulose Manufacturers' Union, who is visiting the United States in connection with the missions' work of furthering the commercial relationship between Finland and the United States, at the same time seeking to build up a market in America for Finland's surplus pulp, gave a dinner last week to representative men of the paper industry. Mr. de Julin gave interesting details of the Finnish pulp industry, and explained that it is the intention of the Finnish pulp manufacturers to export their product to the United States through a representative whom they plan to send, so that American paper manufacturers can deal directly with them, and will not need to depend on the services of an importer or middleman. A paper on "The Cure for Bolshevism," was read by Hans Lagerloef, president of the Lagerloef Trading Company, a personal friend of Mr. de Julin. Mr. Lagerloef gave an account of Finland's affliction with this malady, and described as the only effective cure one entailing a "major operation." In short, it is Mr. Lagerloef's idea that Bolshevism cannot be overcome by mere temporizing, but should be wiped out by resort to force, as was done in Finland.

According to recent consular advices, Sweden's paper making industry suffered severely during the war period on account of the great scarcity of chemicals used in the manufacturing process. The latter became almost unobtainable, while the prices advanced beyond reason; this was particularly true of sulphur. In 1916 the paper mills formed a combination which bound the members to the strictest accountability and provided for a high fine when any manufacturer sold below the fixed rates. This led to a further increase. The cost of labor has gone up materially, while the supply is lessened. The paper mills and the banks, which hold large quantities of their notes, declare that the prevailing prices are justified by cost of production.

After a lull of several months the paper manufacturers and exporters report a steadily increasing demand for American paper from foreign markets. With the exception of England, where the embargo placed on American paper and adverse exchange rates have seriously interfered with the export trade, the demand is fast approaching normal, and recently several of the mills have notified their customers that they have withdrawn their price list, indicating that they have a sufficient number of orders on hand to keep them busy for some time to come.

The first suit to be begun by the Chemical Foundation, Inc., to protect its patent right under the 4,500 once German owned dye, chemical and drug formulae, sold to the Foundation by the Alien Property Custodian, under an executive order approved by the President, has been instituted in the United States District Court against the Anglo-French Drug Co., to stop the importation of Arspheumine, on the ground that such importations constitute an infringement of the patent held. It is the purpose of the foundation to protect in every way its rights under the patent acquired, and no effort or expense will be spared in the present litigation, it is said.



## Technical Section



### ANOTHER INVITATION.

Members of the Technical Section and their friends have been looking forward with great pleasure in anticipation of the visit to the mills of Price Bros. & Co., at Kamourang, and Jonquiere. When they learned that the party would take the boat for the return journey at St. Alphonse, the Ha! Ha! Bay Sulphite Company extended a cordial invitation to visit their fine new sulphite mill. They will also entertain the party at supper before the boat leaves. It is without question the finest trip ever planned by the Technical Section, and every member should make a special effort to attend. It will be necessary to send a money order with your application—\$27.05 if you sail from Montreal, and \$16.00 if you sail from Quebec. These are total boat expenses, and include war tax.

### REVIEW OF RECENT LITERATURE.

**A.3. Production of esparto in Northern Africa. (L'alfa, sa production en Afrique du Nord.)** J. Micol de Portemont. *Le Papier*, 22, p. 135, 1919.—Of the 41.5 million hectares of esparto producing land in Algeria, 1,200,000 at most are leased out, and of these only 7-8,000,000 are really used. If the whole of the esparto area were properly utilized the annual Algerian production would be increased from 100,000 to 500,000 tons, and Tunis would yield about 150,000 tons annually. 90 per cent of the production is used by English mills.—A. P.-C.

**A.14. Testing tarred paper. (Essais des cartons pour toitures.)** Papierfabrikant, Nov. 22, 1919, through *Le Papier*, 22, p. 149, 1919.—The following determinations should be made: (1) Thickness; (2) Resistance to folding; (3) per cent tar and bitumen; (4) Absorption; (5) Impermeability. (1) By means of a micrometer. (2) By carefully folding strips 5-6 cm. by 20 cm. over wires 20, 15, 10, 5, and 2 mm. diam., and observing the folds with a magnifying glass. A strip is also folded back and forth without any wire, noting when it breaks, which should not be before the 3rd or 4th time. (3) By dissolving in chloroform, filtering, evaporating, and weighing. (4) By determining the weight absorbed in 24 hours by a piece completely immersed in water in such a way that it does not touch bottom. This should not be over 15 per cent, and in good quality paper is about 5-7 per cent. (5) By noting the time taken by a column of 25 cm. pf. water to force its way through one thickness of the paper. The water should not appear on the under surface before 4-5 weeks.—A. P.-C.

**E.2. Adhesive from waste sulfite liquor.** W. H. Dickerson, U.S. 1,290,117, Jan. 7.—An adhesive suitable for use in road building, making sand cores, and for other purposes, is produced by concentrating waste sulfite liquor in vacuo, and during the concentration adding CaCO<sub>3</sub> in somewhat less amount than that which would be required for complete neutralization of the acid in the liquor.

**E.5. Mixed process for obtaining chemical pulp. (Traitement mixte des matieres vegetales en vue de separer la cellulose des autres matieres.)** French patent No. 490,167 granted to "Cellulose et Papiers." *Le*

*Papier*, 22, p. 153, 1919.—The essential feature of the process consists in interrupting the chemical treatment before completion, crushing the partially cooked material in a suitable crusher, and then finishing the cooking. It is claimed the time of treatment is thereby reduced and the treatment is rendered more thorough and efficient.—A. P.-C.

**K.4. Notes on the cleaning and washing of rags. (Observations sur le lessivage des chiffons et du lavage qui doit y succeder.)** E. Arnaud. *Le Papier*, 22, p. 129, 1919.—The process of cleaning rags must be adapted to the quality of the rags and to the properties it is desired to give them. Some classes of rags do not require any cleaning, but these are very few, and on the whole they do not give satisfactory results on the machine. A thorough cleaning, if properly conducted, yields a material which is more easily and thoroughly washed, shredded, bleached and refined. The paper made from it is also stronger owing to the better felting properties of the fibres on the machine. The 3 factors to be taken into consideration are: (1) The amount of alkali per 100 kilos of rags; (2) The temperature at which the cleansing is to be carried out; (3) The length of time of the treatment. Treatment with lime alone, under a pressure of 4-4.5 kilos, decolorises the rags, destroys any wool which may be present, and softens the ligneous matter. Treatment with soda ash removes grease and dissolves albuminoid and pectose matters, gums, etc. Caustic alkali is more energetic in its action, and should be used only when absolutely necessary, as it acts on the fibres themselves, entails greater wear of the washers, and is liable to cause dangerous burns. The washing of the cleaned stock requires as much care as the cleaning, and is often improperly carried out. After all the steam has escaped, the alkali should be gradually withdrawn, clean water being added at the same time with continuous agitation. This prevents the reprecipitation on the fibres of much of the incrusting matter, which has been dissolved during cleansing, but which is insoluble in cold water.—A. P.-C.

**K.6. The recovery of waste paraffined paper by extraction with volatile solvents.** Otto Kress and L. F. Hawley, *J. Ind. Eng. Chem.*, 11, 227-9 (1919).—Waste paraffined paper was extracted with gasoline in a small intermittent extractor, the amount of solvent and paper being varied in different runs. Two extractions were made on each charge of paper, the amount of solvent used in the second extraction being equal to the amount drained off from the first. Using 20 gallons of gasoline (b. 90-140°) at one application per 7 pounds of paper, the paraffin retained by the paper amounted to 0.21 per cent based on the extracted paper. Using 8 gallons of gasoline per 20 pounds of paper, the paraffin retained was 3.40 per cent. With a large, well designed extraction system it should be possible to get even better results with less solvent.—(Chem. Abs.)

# PULP AND PAPER NEWS

The Carswell Co., Limited, manufacturers of law books and stationery, Toronto, have removed from 19 Duncane street to larger and more commodious premises in a new, concrete building at the corner of Adelaide street west and York streets, Toronto.

William G. Imrie, of Toronto, a widely known advertising man and brother of John M. Imrie, manager of the Canadian Press Association, has joined the ranks of the benedicts. He was married to Miss Marion Stark, daughter of Mr. and Mrs. N. Quesnel, Grace St., Toronto. Mr. Imrie and bride have returned from a wedding trip to New York and Providence, and have taken up residence on Laurier Ave.

The late Robert Kilgour, of Kilgour Bros., manufacturers of paper boxes and paper boxes, Toronto, who died on December 3rd last, left an estate of \$362,836. A probate of his will has just been issued, and an income of \$10,000 a year is provided for his widow, who also gets an insurance of \$44,953, and a life interest in the realty. Each of the sons, William Ashley and Robert Cecil Kilgour receives \$30,000. Various Missions and the Bible Training Institute are bequeathed several thousand dollars. The late Mr. Kilgour held stock in the Canada Box Board Co. to the extent of \$68,510, and also considerable stock in the Carter-Crume Co., the American Sales Book Co., and the Pacific-Burt Co., as well as other concerns.

A charter has been granted to the Riordon Annex Housing Co., Limited, with headquarters at Hawkesbury, Ont., and a capital stock of \$50,000. Another organization which has just been incorporated is Premier Paper Products, Limited, Sarnia, Ont., with a capital stock of \$50,000.

H. G. Schanche, who has been appointed chief forester of the Abitibi Power and Paper Co., Iroquois Falls, Ont., has selected a site for a Forest Nursery, and the clearing and preparation of the same is now in progress. The output of the nursery will be made to satisfy the demands of the reforestation program of the Forestry Department. Mr. Schanche will leave shortly on an extended trip over the limits of the company in order to gain first hand knowledge of the same, following which a working plan will be drawn up for the surveying and mapping of the holdings. A regeneration survey on virgin and cut-over areas is at present being carried on within the limits of the company. This work is under the supervision of Dr. C. D. Howe, of Toronto, and is similar to the investigations of a like nature recently conducted by him on the limits of the Laurentide and Riordon companies.

John W. Haraux, representing Whiting-Patterson Co., Inc., wholesale paper and envelope dealers, New York, was in Montreal last week calling upon the trade.

S. F. Duncane, of Toronto, sec-treas. of the Provincial Paper Mills Co., and family, are spending a vacation of the Wawa Hotel, Lake of Bays.

E. R. Mosher, of New York, representing the In-

terstate Pulp and Paper Co., Inc., whose specialty is paper and boards of every description, was in Montreal last week on business.

James A. Cook, who has been a member of the staff of Brown Bros., manufacturing stationers and wholesale paper dealers, Toronto, for the past forty years, and his son, James P. Cook, who has been with the same firm for a score of years, have left to engage in a similar line of business on their own behalf. A pleasant function took place at the warehouse, when Mr. Cook, Sr., was presented by the factory staff with a beautiful cabinet of silver and by the warehouse employees with a handsome easy chair as a mark of appreciation. Mr. Cook, Jr., was given a silver service on the same occasion, as a tangible expression of personal regard.

William C. Jephcott, late of the Dominion Paper Box Co., Toronto, who enjoys the distinction of being elected the first Hon. Member of the Canadian Box Manufacturers' Association, accompanied by his wife and Miss Kathleen Jephcott, left recently on a trip to England.

C. E. Nicely, of Toronto, assistant sales manager of the Toronto Paper Mfg. Co., spent the past week at his home in South Bend, Ind., where he attended the wedding of his sister.

A. M. Huestis, of Toronto, Canadian representative of the Kalbleisch Corporation of New York, accompanied by Mrs. and Miss Huestis, have been spending a vacation at Alexander Bay.

La Reine Lumber Co., Limited, of Quebec City, has been incorporated to manufacture and deal in lumber, timber, pulp and wood products, and to take over as a going concern the manufacturing business of Welford, Laliberte & Frere, St. Remi, Que. The capital stock is \$49,000.

In connection with the recent outbreaks of forest fires in Northern Ontario, some of which have, it is alleged, been started by settlers burning slash without first obtaining a permit. They will be prosecuted by the Department of Lands, Forests and Mines. It is interesting to note that the Ontario Criminal Code has been amended by the Legislature. Personal negligence in connection with fire risks now is a serious offence. When an authorized fire officer recommends reasonable alterations for safeguarding life of property in connection with a saw mill or yard in which logs or lumber are held, and the alterations have not been made within thirty days after such notice, the owner or person controlling the property will be liable to a fine not to exceed \$1,000 or imprisonment not to exceed six months, or both.

The oldest printer in Canada died in Kingston, Ont., during the past week. He was John Smith, who for many years conducted a job office in that city, and for some years was foreman of the news room of the New York World. The late Mr. Smith, who was born in Kingston, was 78 years old. The honor of being the oldest typo in Canada is now claimed by Samuel

for 12 years. King was a Wood staff, who is in his 75th year, and started to learn the art in the Whig of London on the July 12th, 1857, of years ago.

James Muir, formerly a member of the Board of Control of Ottawa, is a widely known Canadian newspaper man, has purchased the Gazette, of Alexandria, Ont., which is an Advocate, of Trenton, Ont., has been bought by W. A. Stetin, late of the Dufferin Post, of Orangeville, Ont., and Thomas Jarrett, late of the Toronto Telegram staff.

Two new publications have recently been launched in Ontario. They are the Northern Canoeist, issued in Georgian, of which F. G. Baker is editor, and which will devote special attention to the Northern Division of the American Canoe Association, and the Retail Merchants' Globe, Toronto, which will come out once a month in the interest of the retail trade of the province. Claude Sanigan, formerly in charge of the Globe bureau in London, Ont., is the editor of the latter publication.

The "Canadian Boy" Magazine, which was established in St. John, N.B., by Percy Gibson, has been purchased by the Dominion Council of the Boy Scouts' Association of Canada as its organ. The services of Mr. Gibson have been secured, and he has been added to the Council, and will look after the publicity work of the Boy Scouts' Association, making his headquarters in Toronto.

John M. Imrie, manager of the Canadian Press Association, Toronto, and family, are spending the holidays at the Elgin House, Muskoka.

Major-General Sir David Watson, commander of the Fourth Canadian Division, recently returned home after an absence of nearly five years, and was warmly greeted by the citizens of Quebec, and also tendered a civic reception. General Watson is the publisher and managing director of the Quebec Chronicle.

Mrs. Peter Henderson, Montreal, passed away recently after a protracted illness, in her seventy-second year. Besides her husband she leaves two daughters, and two sons, one of whom is James R. Henderson, business manager of the Gazette Printing Co., Montreal.

Stainton, Downey & Evis, Limited, have been granted a charter with headquarters in Toronto, and a capital stock of \$100,000, to conduct the business of stationers, printers, publishers, electrotypers, etc., and to manufacture envelopes, paper bags, boxes, cardboard, books, novelties, etc. The incorporators are Wm. H. Stainton, Chas. H. Downey, Sidney A. Evis, Arthur B. Dalby and Chas. E. Doust, all of Toronto.

According to announcement made by Mr. George F. Henderson, K.C., at Ottawa this week, it is understood that the American Barking Drum Company has notified several Canadian paper manufacturers that it intends to bring action against the William Hamilton Company, Ltd., of Peterboro, Ont., for infringement of patent rights. The "Gunter" patents are concerned. The action, if it really goes to the courts, would doubtless take the form of an injunction to restrain the Hamilton Company from making use of the patents it is alleged to have infringed upon. No writ was issued in the Exchequer Court at Ottawa up to Tuesday this week.

### THE SURVEY OF ONTARIO WOODS.

Roland D. Craig, of the Commission of Conservation, Ottawa, and staff, are now at work making a survey of the timber wealth of Ontario. It is expected that the job will occupy about three years. The province will be divided into five drainage areas, consisting of the southern portion of Ontario, the Ottawa Valley, the Georgian Bay district, the Lake Superior region and the north. The survey, when completed, will not only furnish a reliable estimate of present standing timber and pulp wood in the province, its location, distribution of species, etc., but data and maps will be supplied showing the area covered by the forests, the area suitable for agriculture, the waste lands and the areas which should be devoted to the production of forests.

This basic information, which has never previously been available, will afford some concrete facts relating to the timber resources of Ontario. While no attempt will be made to cruise the whole province, since a large proportion of the timber is in private holdings, for which the holders have detailed cruises, reconnaissance work will be undertaken to supplement the detailed work that has already been carried out by private interests.

The Ontario Government has assured the Commission of Conservation of the fullest measure of sympathy and co-operation, and all the figures or other information of a confidential character, which may be given to the Commission, will be treated as such, and will be used only for the purpose of enumeration and in arriving at the desired results.

Mr. Craig, who is a graduate of Cornell University, with the degree of Forest Engineer, has had a wide experience and insight into such work, and has for a long time been attached to the Commission of Conservation. He recently completed a valuable and comprehensive survey of the province of British Columbia forests, the details of which have been published and are in great demand.

### EXTENDING PAPER COATING PLANT.

Work was begun this week on an extension to the finishing room of the coated paper plant at Georgetown, Ont., of the Provincial Paper Mills Co. The addition will be 80 x 90 feet, one storey high, with basement, while a similar extension is being erected to the color room, 40 x 80 feet. The new structures are being built of concrete blocks, and steel trusses, and the work is being carried out for the company under the direction of W. J. Tremble. It is expected that construction will be completed by the end of September, and the extra room will result in increasing the output of the plant, which is very busy at the present time. It is probable at a later date new equipment will be added, but this has not yet been decided upon.

An interesting case was tried in Toronto recently when the Manufacturers Press, Limited, brought suit against H. A. Hancock. The latter signed a contract by which he was to receive encyclopaedias into which he could paste informative articles. He did not like the books and sent them back. The Manufacturers' Press then brought suit to recover the price of the same. Judgment was given for the latter, and the books will be returned to Hancock, whom the Court advised not to sign contracts unless he intended to stand by them.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, July 17.—The midsummer period has now set in in the paper business, and while the mills report that orders are coming in quite freely, jobbers state that business is seasonably quiet, and a large number of the staffs of the various wholesale concerns are enjoying holidays. Another factor, which has interfered with the trade in Toronto, has been the embargo placed by the railways on all incoming freight consigned to Toronto and suburban points. Both the G. T. R. and the C. P. R. have notified the traffic department of the Board of Trade to this effect. Provision has, however, been made to exempt any firms from the embargo, where they will undertake to do their own cartage from the railway sheds. Freight agents along the lines have been notified of the names of the firms free from the embargo, and outside shipments accepted for local consignees. A number of wholesale houses are among the exempted concerns. The strike of the carters still continues, and there is no present indication of a settlement.

There is a brisk demand for newsprint, and all the mills are busy. Book and writing mills also report a good business. It is reported that newsprint is growing scarcer all the while, and that an advance may be expected in the near future, owing to recent raises in wages and increasing overhead costs. Coating paper plants, wax paper plants, toilet and tissue mills are all very active, and expect to continue so right through the summer.

The market for groundwood is getting better all the while, and prices are now considerably firmer than they have been for a long period. Sulphite pulp continues in steady requisition. There is still a vigorous agitation, on the part of the pulp men especially, to secure better transportation facilities so far as meeting the foreign demand is concerned. A deputation recently waited upon Hon. C. C. Ballantyne, Minister of Marine, in connection with the difficulty being experienced, and the members were told that the Government could not afford any immediate relief. The Minister stated that the Dominion Government could not influence the British Government to

relax the restrictions, which it has placed upon all tonnage under British charter. Mr. Ballantyne pointed out that by the end of 1919 the Government would own and operate twenty ships, and that by the close of 1920 fifty would be available.

### Provincial Charter Required.

Another interesting matter to pulp and paper firms is whether a company operating under a federal charter can be required by law to take out a provincial charter. The Supreme Court of Canada has just handed down a judgment on this long drawn out question deciding in favor of the provinces, which means that a Dominion company can be compelled to bring itself under a provincial companies act as a condition of carrying on business in the provinces. The effect of the decision appears to be to make a Dominion charter valueless for practical purposes in those provinces which require such companies to take out a provincial license. The decision would appear to apply to all classes of companies. The provinces requiring provincial licensing are Ontario, Manitoba, Saskatchewan, British Columbia and New Brunswick.

There has been only one change in paper prices during the past week, and that is an advance of half a cent on drug wrap, which is now selling at nine cents instead of eight and a half; snow white has been advanced from nine and a half cents to ten cents.

It is interesting to record that extensions are going on in a number of mills, and that one coating paper company is extending its plant, while an addition is being built to the sulphite mill of the Spanish River Pulp and Paper Co. at the Soo, and a new roof placed on the machine room. At Espanola, the company are erecting a number of new houses for their employees, while two new schools are being put up and an extension is being made to the machine room for the installation of another paper machine, which will considerably increase the output of newsprint.

Paper companies in Canada importing Bristol board, who have in the past imported stock with the grain running the short way of the sheet, have been notified that it would be more convenient for the makers to make the stock with the grain running the

## Scandinavian American Trading Co.

50 E. 42nd STREET      TELEPHONES <sup>2074</sup> 2075 MURRAY HILL, NEW YORK

Have an extensive  
and steady market  
for

# KRAFT PULP

When you have  
any surplus to  
offer write us

long way of the sheet. Customers have been asked what would be acceptable to them if stock with grain running the long way, is on hand to ship same instead of stock with grain the short way.

The new trade mark of the Canadian Pulp and Paper Association is now becoming quite well known, and members of the Association have been asked to see that letter-heads are printed or embossed with the insignia as well as invoices and other literature going to the public. Firms are also urged to have the design on all their labels, and on every package and every roll of paper that leaves the mill. It is distinctly a Canadian device, and may be used on all packages of pulp and paper.

Reports of pulp and paper companies presented during the past few days show satisfactory earnings and business in all spheres of the pulp and paper arena is now steady. Practically every branch is on a normal basis, and there has been a revival of demand in every line. The question of future prices is a live one, and a number of advances may be looked for in the not far distant future, according to reports.

The Montreal Envelope Co., 4 St. Antoine St., Montreal, are doing some clever advertising in the press, calling attention to the fine quality of their work, either printed or plain, and stating they are specializing in time saving window envelopes. The company's publicity is effective and educative in that it draws the attention of business men to the wisdom and desirability of using good envelopes, which have a direct bearing on good business and favorably influences the mind of the buyer. An attractive envelope creates a favorable impression on the receiver, whereas the cheap, flimsy sort, often find their way into the waste paper basket without being opened. The company in question is setting a splendid example to many manufacturers of stationery who are endeavoring to get their customers to make use of quality goods, now that the war is over, and the necessity character of material is felt. The propaganda campaign is right in line with that inaugurated some time ago by the Canadian Pulp and Paper Association, which sent out to printers, wholesale papers, dealers and others for wide distribution to patrons a well worded and forceful leaflet headed: "Why send your goods to market dressed like a slouch?"

#### Pulp Prices.

	F.O.B. Mill
Groundwood pulp . . . . .	\$28.00 to \$30.00
Sulphite, news grade . . . . .	\$65.00 to \$70.00
Sulphite, easy bleaching . . . . .	\$5.00 to \$7.00
Sulphite bleached . . . . .	\$110.00 to \$115.00
Sulphate . . . . .	\$80.00 to \$85.00

#### NEW YORK MARKETS.

New York, July 12.—From all directions reports have been received this week telling of increasing activity and firmness in every branch of the paper industry. Demand from consuming sources shows no abatement, and manufacturers and dealers are kept busily engaged in filling the wants of their customers. Mills in the great majority of cases are sold so far ahead that they are now either withdrawing entirely from the market or else are refusing to enter into further engagements unless buyers are satisfied that prices and deliveries remain open questions until they are in a position to specify dates for shipments and what shall be paid for the goods. Almost

every day reports are heard regarding the withdrawal of this or that mill from the market. Some manufacturers, particularly those making newsprint and book papers, are said to have their entire output for the remainder of the year contracted for, and naturally such advices are creating concern among consumers and jobbers and causing them to exert greater efforts to cover their probable forward requirements.

Every factor in the market appears to lend weight to the opinion generally held by traders that demand is going to continue brisk for some months to come, and that prices are destined to go higher. Raw material of practically every description is mounting in cost and, in most instances, there are no perceptible indications that any kind of papermaking material is going to be cheaper in the near future. Added to this is the question of labor. Paper manufacturers are now paying higher wages to their employees than ever before, and, contrary to the belief of some students of economic conditions, there seems scant likelihood that the wage scale in the paper industry or in other industries will undergo reduction for a long time. Rather, the wind appears to be blowing in just the opposite direction, and many who base their opinion on existing facts instead of on theories predict that labor will become even costlier.

Consumers of paper, evidently believing that prices on paper as well as on all other commodities are on high levels to remain for an indefinite period, are consequently placing orders with almost careless freedom, their policy in this respect presumably being prompted by fear that if they permit their requirements to go unfilled that when they ultimately are in need of paper they will not be able to secure necessary supplies. Jobbers likewise are stocking up with apparent disregard to prevailing prices. This in itself is a bullish argument for the maintenance of prices. With jobbers and dealers having high-priced stocks of paper on hand, even though demand should ease off, every effort will be made by the man in between the manufacturer and the user of paper to prevent any serious reaction in prices.

Newsprint is moving in a steady way, and at firm prices. The majority of mills have about all they can attend to in supplying contract customers, with the result that buyers in the open market are experiencing no little trouble in filling their wants. Book papers are strong and in active demand. Some manufacturers, having contracted for their production for several months ahead, have retired from the market for a time, and spot purchasers are compelled to seek the paper desired rather than the paper seeking a buyer. Tissues are notably firm and are sought in increasing volume, while wrappings are moving in good tonnage and at steady quotations.

The board market has strengthened, and \$40 per ton is about the lowest figure quoted now on plain chip board, whereas most producers are insistent on higher prices. Boxmakers are coming in the market to cover their fall requirements, and mills are therefore experiencing a much better demand.

GROUNDWOOD. — The groundwood market displays a stronger undertone than has been evident in some months. This is due to the fact that demand has gradually expanded until now mills are shipping virtually their entire output about as soon as it becomes available. Many grinders still have surplus stocks, accumulated some time ago, on hand, but they are carefully conserving these supplies as a reserve to tide them over the dry season, so that, for the pres-

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Buy Pulp and Paper for Export  
Quotations Solicited.

... out little or no figure in the market. Quotations range from \$28 to \$30 per ton at the producing mills in the East, and reports are heard of sellers asking beyond \$30 in some cases.

**CHEMICAL PULP.**—The market situation in chemical wood pulp remains firm, but without especial feature. Demand of moderately broad proportions and domestic manufacturers as a rule are occasioned no trouble in finding an outlet for the great bulk of their pulp, notwithstanding the policy of consumers in limiting their orders to amounts for which they have immediate need. Producers seem equally as unwilling to enter into long-term engagements as are buyers, so that this phase of the situation has no worth, while influence on values because manufacturers are not pressing buyers to broaden their operations. Foreign pulp is being absorbed in fairly large amounts, and there is little question that more business is passing in Scandinavian fibre than at any time since prior to the war. Prices on the other side are now nearer to a parity with those ruling on domestic pulps, which, of course, makes for increased activity in trading.

**RAGS.**—The rag market is in a very strong position. Business in the low grades as consumed by roofing felt mills has approximated proportions this week bordering on a boom, and prices have advanced sharply under the increased movement of supplies into consuming channels. No. 1 roofing rags have been sold at as high as 3.25 cents a pound f.o.b. New York, and predictions are now being made by dealers that a \$70-per-ton market will be reached before the end of the month. Packers and dealers are booking orders with caution, claiming that never before have they encountered so much difficulty in replacing the stock sold. While much of the talk concerning a shortage of rags can be discounted, it nevertheless remains true that collections all over the country have been lighter this spring than in many years, and unless larger amounts of material are soon forthcoming from abroad, there seems no way of halting the upward movement of prices. Thirds and blues continue to be freely sought at 4.25 to 4.75 cents a pound New York, depending on the packing, and white rags are moving steadily toward mills at a price basis of around 7 cents for No. 1 repacked whites. Stockings are firmly quoted at 3.75 to 4.00 cents New York, and new white shirt cuttings of No. 1 quality at 14.00 to 14.50 cents.

**PAPER STOCK.**—Trading in old papers has been fairly lively during the current week, and prices are firmly maintained with slight advancement recorded in several grades. The steady call for soft white shavings from mills has run prices up to a minimum of 3.50 cents per pound f.o.b. New York for No. 1 packing, while kraft paper is quoted at higher levels of 2.40 to 2.50 cents New York. Books and magazines rule notably steady, although demand from manufacturers have been devoid of the snap that was in evidence a short while ago. The market has been pretty well cleaned out of books, and the probabilities are values will be maintained until more stock accumulates. Folded news is selling at 65 to 70 cents per 100 pounds f.o.b. New York, and No. 1 mixed paper at 55 to 60 cents.

**BAGGING AND ROPE.**—Quotations on scrap bagging are higher, dealers now being insistent on at least 2.60 cents a pound for No. 1 packing at the point of shipment. Gunny is also a bit firmer in price, sales being reported at 3.25 cents New York. Roofing bagging is easily the strongest item in the market, and specification packing is freely fetching 2.40 to 2.50 cents a pound New York in sales to consumers. Old rope is steady at a quotational range of 5.50 to 5.75 cents f.o.b. New York for No. 1 Manila rope.

**JAPS EXPORT CANADIAN PULP.**

Paper making in Japan is confined principally to the lower grades. The high-grade paper such as art paper, bonds, and ledger paper, as well as special lines are not manufactured to any great extent.

The following figures show countries to which paper is exported by Japan:

	Yen, 1918.	Yen, 1916.
China . . . . .	9,575,972	4,687,426
Kwantung Province . . . . .	2,972,503	1,333,103
Hong Kong . . . . .	2,039,982	723,130
British India . . . . .	3,866,633	602,557
Straits Settlements . . . . .	1,077,765	163,675
Asiatic Russia . . . . .	914,303	1,086,119
Great Britain . . . . .	204,802	220,768
United States . . . . .	529,482	316,589
Australia . . . . .	1,025,552	216,280
Other Countries . . . . .	6,261,806	434,391

Last year about 75 per cent of the paper pulp imported by Japan was supplied by Canada; it is to be supposed that a great deal of this was re-exported in the form of paper.

# NORDLING, MACÉ & CO.,

PARIS, 11, Rue de la Pépinière,

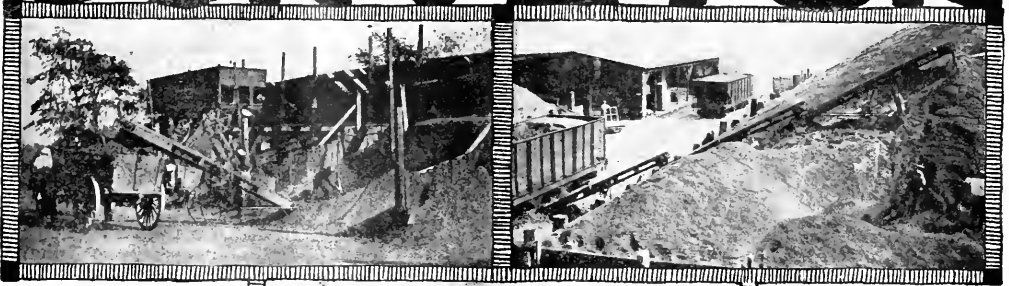
Telegrams: "NORDKEL."

## WOOD PULP AGENTS.

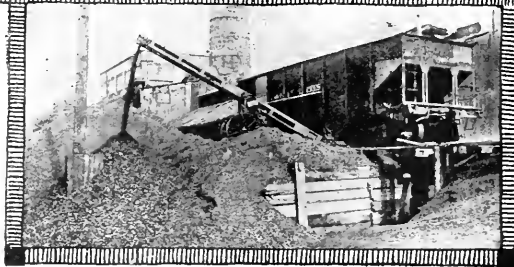
CORRESPONDENCE SOLICITED.



# The SCOOP CONVEYOR



Loading coal into truck with a Scoop Conveyor saves labor and permits of more deliveries per day. The Scoop on the feeding end of the machine can be pushed or buried right into the coal pile making it possible to simply scrape the coal onto the carrying belt, instead of lifting it up by shovelfuls into the feeding hoppers fitted to ordinary conveyors.



Unloading coal from hopper bottom cars with a Scoop Conveyor saves the construction of a track hopper or pit. To unload a car the scoop end of the machine is pushed under the hopper doors and the material is carried away by the belt as fast as it flows through. Cars can thus be unloaded quickly and with a minimum of labor at any joint along the track.

The Scoop Conveyor is an original, distinctive and serviceable labor-saving machine for storing, reclaiming and transferring material, for loading and unloading cars, trucks and wagons.

## DOES THE WORK OF FROM 6 TO 12 MEN

and keeps equipment moving. Eliminates much shovel and wheelbarrow work. Enables men to work faster and easier. Does three to five days work in one.

Our 1919 model, the result of experience, standardization and quantity production embodies life-prolonging and service-giving improvements. Made in six different sizes. Prices from \$390 to \$770. Complete, with Electric Motor or Gasoline Engine.

## OVER 1,000 USERS

and about one-half of our sales are "repeat orders."

Illustrated literature showing the wide range of application of the Scoop Conveyor mailed upon request.

# PORTABLE MACHINERY CO.,

PASSAIC, N.J.

### BUILDING HOMES TO BURN UP.

The recent serious fires in Northern Ontario, when the homes of several settlers were destroyed and a holocaust similar to that of 1916, prevented only by the timely fall of heavy rains, is causing much discussion in lumbering, paper-making and government circles. There is no man who understands conditions in the North better than Mr. William Henderson, of Toronto, who for many years has been superintendent of the Shantymen's Christian Association and has carried on the work of the organization in all the lumber, logging and pulpwood camps in that part of Ontario.

Speaking to the *Pulp and Paper Magazine*, he stated that the character of the homes of the settlers, which are for the most part only frame shacks, has much to do with inviting the fire fiend and that it is simply folly to think that in a hot dry summer, any number of fire wardens can prevent the spread of the flames. Mr. Henderson declared that unless the slash was burned every winter and wide clearings made around the various homes, settlers in the forest would be in constant peril. He added that in certain districts that are open for homesteading the chief inducement to take up land is the revenue to be derived by cutting and selling the pulpwood on it, and this brings in the French-Canadians by the hundreds. They are good bushmen and do well as long as the wood lasts, but have not much idea of real farming, so that hot summer weather finds them away from home working in some saw mill or construction camp while the wife and children live by themselves among the stumps.

Mr. Henderson asserted that he walked one day from Matheson to a camp on the Abitibi river some twenty-

six miles east. Until he came within eight miles of the river there was nothing but a wilderness of burnt trees. Among these trees up to about ten miles from Matheson were the little homes of the settlers, in some cases quite close together, but none far from the burnt timber, getting drier year by year, and with each year's added undergrowth to make it more dangerous. When the great fire of 1916 occurred it was in this district that had been previously burned over, that the flames raged most fiercely and where most of the lives were lost—in all about three hundred. He stated that much of the timber, being only blackened outside, was still valuable as pulp wood, and many thousands of cords in the past three years have been cut and sold at good prices, thus making a good living for the settlers.

Mr. Henderson told of how the early frosts prove fatal to most field crops and remarked that in view of the history of the past it is not to be wondered at that there is no great rush of settlers in certain districts. The one sure crop—until the fire comes—is the pulpwood, and consequently settlers will not take up the lots in the bush with all the risks entailed by living there. They go on the fine cleared lands that the fire has already travelled over.

### BROMPTON DOING WELL.

Largely because of their ability to use their own pulp in their own paper mills, and because of the diversity of their production. Lumber figured to the extent of 12,000,000 feet in the output of the company. For the first six months of the present fiscal year the net earnings are nearly twice the common stock dividends. The new machine will add 17,000 tons of newsprint a year to the source of income.

## GRACE & CO., LIMITED

### MONTREAL, QUE.

EXPORTERS & IMPORTERS.

BLEACHED — EASY BLEACHING — UN-  
BLEACHED PULP — KRAFT PULP —  
GROUND WOOD PULP

KRAFT WRAPPING — SULPHITE WRAP-  
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**WOOD PULP**  
of every description

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**M. GOTTESMAN & COMPANY**

Incorporated

18 E. 41st Street

New York, N.Y.

Established 1886

**BATES & BATES OPEN TORONTO OFFICE.**

The opening of a Toronto office, 810 Wellington Street East is announced by Messrs. Bates & Bates, sales agents of Bates Pulp. They now have a considerably increased production of felts to handle and with the increased demand consider this step necessary to handle the Ontario and Western business efficiently.

Bates & Bates are represented in British Columbia by Messrs. Beatty, Creighton & Company, of Vancouver, and in the Maritime Provinces by Mr. V. A. Barnwell, of Pictou. The organization is a live one, and spares no expense or effort to give the paper industry every possible encouragement to use their lines, and especially endeavour to sell satisfactory service.

**WHALEN COMPANY EXPANDING.**

As was intimated a few days ago when announcement was made of strong additions to the Board of Directors of Whalen Pulp and Paper Mills, Limited, new financing for the British Columbia pulp and paper enterprise was at that time in process of negotiation.

It is understood that Royal Securities Corporation, Limited, and Peabody, Houghteling & Co., of Chicago, have underwritten approximately \$1,500,000 of 6% First Mortgage and Refunding Mortgage Serial Gold Bonds of the Whalen Company. The Bonds mature serially from 1921 to 1934 and are secured by specific mortgage on the plants and properties of the Whalen Company exceeding in value \$15,400,000, more than four times the total \$3,500,000 bonds outstanding, including the new issue. The purpose of the financing is to provide for the refunding of large expenditures made by the company during the past few years on its three mills, and to provide approximately \$1,200,000 of working capital for the profitable expansion, under the energetic management of Sir George Bary, of its rapidly growing export lumber and pulp and paper business with the American Middle West, the Pacific Coast, Japan and the Orient.

It is interesting to note that the Whalen Company with its production of 54,000 tons per annum from three operating mills ranks as the second largest producer in Canada of high grade sulphite.

**STANDARD APRON CONVEYORS.**

We have just received the Jeffrey Mfg. Co.'s copy of new catalog No. 258 on Standard Apron Conveyors, which is now ready for distribution to the trade.

This catalog contains 75 pages, devoted to installations showing Standard Steel and Wood Apron Conveyors in service in various industries, specifications, general dimensions and other important data of vital interest to the purchaser.

These conveyors, both of steel and wood flights, are so arranged in this book that not only the engineer, but the layman, who is more or less unfamiliar with conveying machinery, can easily select a conveyor which will completely meet his requirements.

There are no confusing tables to contend with. There are some important notes to aid the purchaser in selecting a conveyor.

This catalog will be of special advantage to the purchaser as he will save the time and expense heretofore required in making drawings and layouts for his own particular needs.

Why didn't the Minneapolis Tribune build their paper mill in Minnesota?

**ECHOES OF DOMINION DAY.**

Iroquois Falls is a winner's town. A delegation of athletes and others went to the celebration at New Liskeard and nearly cleaned the slate. The band won the \$100.00 prize, the fire department came away with the large silver cup donated for the ladder race and also took away with them the third for the hose and reel race.

The baseball team, composed entirely of Iroquois Falls bona fide residents and employees of the Abitibi, won from a team composed of the pick of several municipalities. Before the prize allotted for the team winning the baseball games is settled upon a game is necessary with Timmins.

**At Grand Mere.**

Grand Mere combined the celebration of Dominion Day with a rousing welcome to the returned soldiers of the Laurentian town and a touching tribute to those who gave their lives in the cause. A special 16-page issue of *Le Digesteur* commemorates the big event. It is printed on magazine stock and carries four columns to the page, two in French and two in English. A list gives the names of the 24 men who died in khaki, the 254 who enlisted from Grand Mere, and the eleven who won military decorations. It would take a lot of space to tell all about the parade, of which there are some excellent pictures, and the recent marriage of Mr. Ellwood Wilson's daughter, Caroline, to Mr. Earle Spafford, of which there is also an excellent picture, and a lot of other interesting things and other interesting pictures. There are two pages crowded with accounts of the sports. The editor saw an entry for one contest. It was written on a small piece of cardboard, and read, "Boy for the pie. Under 12." Unfortunately there were only 12 pieces for 35 contestants, so the gore was limited as to distribution. Some very creditable performances are recorded for the various athletic events.

**U. S. JUDGES SIT AGAIN.**

The Circuit Judges of New York, who sat as arbitrators in the case of the American Newspaper Publishers' Association against newsprint manufacturers in the appeal from the prices fixed by the Federal Trade Commission, have granted an application for new hearing asked for by the publishers to review the supplemental findings of the Federal Trade Commission of Oct. 18, 1918, and prices established thereby which the publishers claim are unjust and unreasonable. The judges have set October 6, 1919, as the date on which they will listen to arguments on the application.

**AN IMITATION.**

"We Welcome Fair Competition" is the title of a circular just issued by the Portable Machinery Co., Passaic, N.J., manufacturers of the Scoop Conveyor. It briefly describes how one concern has copied and is trying to market an imitation of the Scoop Conveyor. As there is suit now pending for infringement of rights, the circular warns possible customers of portable conveyors against purchasing the imitation.

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

Published every Thursday by The Industrial and Educational Press, Limited, Garden City Press, Ste. Anne de Bellevue, 'Phone 165.

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507 Board of Trade Bldg., Vancouver.

Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

Changes in advertisements should be in the Publishers' hands ten days before the date of issue.

VOL. XVII.

GARDEN CITY PRESS, Ste. Anne de Bellevue, Que.

No. 30

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Anything in your electrical specifications—anything in equipment from a dynamo or generator down to the smallest lamp—we are now in a position to supply. Save the time and worry that ordinarily comes in ordering these goods by laying your needs before us.

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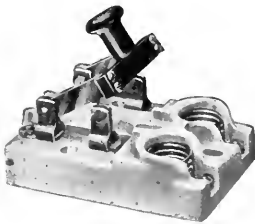
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## The Canadian Fairbanks-Morse Co., Limited

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, HAMILTON,  
WINDSOR, WINNIPEG, SASKATOON, CALGARY, VANCOUVER, VICTORIA.

# EDITORIAL

## ENGINEERS AT OTTAWA.

One of the happiest memories of the war, one of the most gratifying, is the way the engineers got into the game and put organized common-sense at the disposal of the Government. This was done in such an effective manner that a number of things that were quite impossible (before the war) were accomplished with satisfaction and success. Engineers have a way of doing a lot of effective thinking which leads to efficient and energetic action. They don't talk much, as a rule, but they manage to saw a lot of wood.

A number of engineers rendered conspicuous service to the Government and people of Canada in the last five years and it occurs to us to wonder and to inquire why it is that they are only called in under stress of unusual circumstances. How much better for the country if the men at the top could see the advantage of having an engineer at the head of a department whose work is largely of an engineering nature. It would seem almost that the principal qualification is to be a politician. A good engineer is likely to fall down on this specification. He is too busy minding his own business and getting results, for the people he serves. That last may be true also of politicians who serves other than *the* people.

It is not our intention to discredit the high-minded, cleanhanded public servants at our capitals, who have done their best. It is our plea that the big engineers who have shown their willingness and capacity for serving the people be kept at it. The job of developing our country along right lines is bigger now than it ever was. Construction and reconstruction in many fields requires an engineer's mind to direct it right. Among these we might mention public works, railroads, mines and forests.

Now is the time to build the engineers into the Government. Pick them for ability, not servility.

## EDUCATION, TECHNICAL AND OTHERWISE.

During the last few days the newspapers have announced that one of the important subjects to be considered by the Provincial Premiers when they gather in Ottawa in September will be the matter of technical education and the distribution and application of the million dollars a year that is to be appropriated by the Federal Government. This money is to be divided according to population among the various provinces and to be used solely for the furtherance of opportunities for technical education under certain restrictions imposed by the Federal Government. There seems to be no provision in the bill for the training of teachers for this important movement. It was the lack of teachers and

accommodation that made it necessary for the Fisher Bill in England to provide for a gradual development of the idea instead of endeavouring to establish a complete working technical school organization without the necessary and tedious building of a satisfactory foundation of teachers and equipment.

This program for technical education throughout Canada and the generous support of the Federal Government is not, however, to be found fault with for what it lacks so much as to be encouraged and developed on the basis of the good things that it includes and provides for. A few of our more progressive cities and towns have already made an effort to provide technical education for their young people as far as their means will permit and it is hoped that the Federal grant will not only serve to establish the movement already started more firmly on its feet, but that it will serve as an incentive for similar action on the part of a vast number of other communities whose prosperity will always depend upon the ability of its people to make things, and whose initiative is a bit weak. The knowledge that he can actually do something and do it right is one of the greatest assets that a boy can have, or a girl either. This suggests the very great need of including the education of girls as well as of boys in a technical education program. It is hoped that in adapting educational opportunities to the industrial work of the community the organizers will not overlook the positions that girls occupy in industry and the positions that they will soon or eventually occupy in the home life, which is quite as important as the other.

There is such a thing as an unbalanced education and while it is by no means so serious as the lack of any educational training yet its possibility should be considered, and especially at this time when there is a tendency to over-emphasize the technical, the material and the industrial. Education has two main objects, to train the student to make a living and to prepare him to take his place alongside of his fellows as a responsible citizen, capable and ready to take his share of the burden for the civic and social organization and advancement of his community, province and nation. Technical educational advantages are proposed primarily for the advantage of those who cannot afford to acquire a college or university education, but who need in a concentrated and practical form such training as will fit them at a comparatively early age to take their places as efficient and intelligent wage earners in the industrial world.

The more well-to-do, whether they have ambition or not, and the poor man's son who has ambition and

is not satisfied with the limits of the technical school or the common school. The former, perhaps for social reasons, and the other, unquestionably because of his determination to succeed, will go to the college and university to complete their educational training. The one fully as much as the other needs more than a technical or university education. Both need to know the economics of industry and enough social anatomy to discover whether his heart is in the right place. As we have observed the curricula of schools and colleges, the present day instruction is painfully lacking in any apparent intention of leading the mind of the student in such lines as will cause him to think out intelligently and sympathetically his relation and responsibility to his community. The community may be his schoolmates and neighbors, his teacher and the town policeman and the other municipal officers, it may be his family, or it may be the people with whom he works on Saturday and vacations, and later on about 300 days a year, and it may and should extend to the consideration of his relations to the Provincial and Federal Government and even beyond that into the wide world of industrial and political connections.

It is getting to be a trite remark that business troubles as well as others start with misunderstandings. This is certainly true, but though the remark is often repeated we find little attempt to remove the chance for so many misunderstandings by endeavouring to train and teach the student from early days to consider his relations to those with whom he comes in contact and to inspire him with a sense of his responsibility for conditions under which he lives, and the responsibility for co-operating and doing his share in improving the conditions in his community.

Realizing that work along this line is of fundamental importance to the future of the Dominion of Canada both politically and industrially a number of men representing such business and technical organizations as the Canadian Mining Institute, the Canadian Fisheries Association, Canadian Textile Institute, the Pulp and Paper Association, the Society of Chemical Industry, the Engineering Institute of Canada, the Commission of Conservation, etc., met in Ottawa about a year ago and appointed a small committee to draw up some definite suggestions for the improvement of educational methods along these lines. It was the good fortune as well as the difficult task of the editor to represent the pulp and paper industry on this committee and to act as its secretary. After long and careful consideration the following memorial was finally drawn up. This has already been heartily approved by a number of important organizations and it has been laid before the membership of the Pulp and Paper Association for an expression of their opinion. It can hardly be conceived that such a body of men who are known to have the best interest of the Dominion at heart could fail to express their approval of such a program for forwarding the already general movement toward improving the

education of Canadian youth. It is the plan of the committee to organize local delegations representing the organizations that approve this memorial for the purpose of presenting it in person to the educational authorities of the various provinces and to the proper Minister of the Federal Government. This is one of the most important subjects that has been brought to the attention of the members of the Canadian Pulp and Paper Association and the very serious and immediate attention to it is warranted by the swift current that is now flowing in the direction of better homes, better schools, better citizenship and a better nation. Now is the time to start things and keep them going in the right direction.

#### *The Memorial.*

Sir,—A committee representing the Canadian Mining Institute, the Engineering Institute of Canada, the Canadian Textile Institute, the Canadian Manufacturers' Association, and other industrial, educational and technical bodies as enumerated below has had under consideration for a year the pressing necessity for improvements in the education of Canadian children and youth in the direction of better training for citizenship and the general upbuilding of character. It is doubtless known to you that this subject is under earnest discussion throughout Canada by various organizations; all of which have so strongly felt the need for some change in our methods of education, that they have passed resolutions asking for various things including more technical education, more attention to the practical needs of our people, a better training for citizenship, etc. The Committee mentioned above has held a number of meetings and discussed the subject thoroughly. The conclusions reached may be summarized as follows.

1. It is of vital importance for the development of a Canadian nationality with high ideals, and efficient performance, that there should be an early and thorough training for citizenship in all schools throughout the Dominion. To be effective this training must be based upon the ordinary activities and occupations of the children and young people. The success of this method is well shown by the Boy Scout movement. Any attempt to teach the abstract principles of citizenship and moral conduct solely through text-books, notes, or lectures is sure to be futile. Children do not understand the abstract, but must be appealed to by the concrete. Fair play, honest dealing, courage, responsibility, co-operation, service, thoroughness and thrift can be inculcated in connection with games, gardening, carpentering, sewing, and other practical occupations, and also in the course of reading, and other lessons dealing with subjects in which children are interested.

2. The committee are of the opinion that compulsory education should be universal throughout Canada up to the age of 14 years at least. They beg to point out that illiteracy even in a minor degree is a great handicap, reducing the productive efficiency of the population, and tending towards the kind of degeneracy of which there are now painful examples in a number of the provinces. Illiteracy is a danger in another respect. It prevents that education of the people, which would be invaluable in any great crisis such as that at present exemplified in Russia. The masses in Russia cannot be reached because they cannot read. It is thus impossible to influence them as an educated



populace can be influenced. They are an easy prey to demagogues. The question should also be considered whether some form of continuation education should not be compulsory for a further period of two or more years.

3. The best system is bound to fail in the hands of teachers who themselves may be undeveloped, and insufficiently educated in the direction required. To secure the desired results it will be necessary to pay the teachers larger salaries in order to make it worth while for the best men and women to devote themselves to the profession. It will also be necessary to give these teachers a better kind of training than they at present receive. This implies an overhauling of the various types of schools for training teachers and incidentally paying better salaries there.

4. Improvements in text-books would be advisable to make them interesting and more closely related to the natural knowledge and the ordinary activities and occupation of children and parents. This would open up the opportunities for character building and for the training in citizenship referred to in section 1. There should also be prepared text-books of special character such as those lately published by the United States Dept. of the Interior, Bureau of Education, and entitled, "Lessons in Community and National Life." The committee feels that in the reading and other books used in the schools great care should be taken that the selection of readings and examples be within the apprehension of the pupils and that they include subjects of every day life.

5. The nature of the instruction should be such as to interest the children more deeply in the things around them and to give them clear ideas of Canadian citizenship and its responsibilities. The character of the illustrations used in teaching should be varied according to the activities of the community. In other words, the school room should be adapted to the interests of the community. The text-books should be supplemented by exhibits of manufactured articles, farm products, etc., and by excursions and lessons outside of the classroom. Schools should be provided in all cases with libraries, selected in part to fit the occupations of the people of the district.

6. The rural schools present special problems. Owing to scattered settlements in many parts of Canada it is very difficult to organize good schools. In the case of settled country a solution may be found in consolidation of small inefficient schools on well known plans, but in the systematic and scientific planning of new settlements the school needs of the community should be carefully provided for. The committee has also reached the conclusion that larger school units are advisable and where possible the municipality should be the unit for school purposes.

All of which is respectfully submitted with the urgent request that this matter be given serious attention and remedial action undertaken.

Chairman.....  
 Secretary.....  
 Names of Representatives of Organizations and Industries.

Grand Mere has a person properly addressed as O. Lord.

<sup>1</sup>Winnipeg is still "engaged" with the municipal paper mill idea. Wait till they are married and have lived with it awhile.

**COBWEBS.**

The last issue of the American Forestry is a special number in commemoration of the services of the American Forestry Regiment. On reading of the wonderful accomplishments of the woodsmen and seeing the photographs of their activities it almost makes one wish there would be another war so one could get into it.

We would respectfully call the attention of the Government of Canada and the Newspaper Section of the Canadian Press Association that London recently went into hysterics over the celebration of signing of the peace treaty. Perhaps that doesn't signify anything to Canada, which has so far been considered a part of the Empire, but so far as the application of the great event to the release of one single industry from the shackles of Orders-in-Council and bills of Parliament is concerned, must be considered apart from the Empire and not affected by anything that happened in Versailles or London. How long, O Lord, how long?

It is breaking out of the cocoon that gives the butterfly the strength to fly. Buckling down to this work before us, as individuals and as a nation, will give us the strength to meet the future.

From the statement that juvenile crime is approximately proportional to the lack of playgrounds, it would seem advisable to build the town about the children's playground, instead of the city hall or the factory. Honest manhood and pure womanhood is worth far more to the country than taxable property.

**THE NEW EMPLOYEE.**

Do you remember when you were a new employee? Perhaps it was not so long ago. Every workman here was a new employee once. Didn't everything seem strange to you at that time—the plant—the machinery—the men? Perhaps there was one man in the Department who greeted you with a smile and occasionally gave you a "tip" on how to do your work more easily. At noon this same man told you how to "check out," and showed you the best place to eat your lunch. And at night he showed you the best way to the street.

You learned to like this man and to look to him for any information you needed about your work. And if he told you that a certain job was dangerous, you paid more attention than if a safety inspector had told you about it.

In these days when a large number of new employees are coming into the plant, every old employee has a great opportunity, and a duty to perform toward these men. Treat them as you would like to be treated if you were in their place. Show them where they are likely to get hurt, and set a good example by being careful yourself.

It has been said that a new employee is as dangerous as an unguarded machine, because he is likely through lack of knowledge of his new surroundings, to injure others as well as himself. This is true until the new man has been made to realize the dangers of his work. The sooner you help him realize this, the sooner will he and you be safe from accidents.—Courtesy of Corn Products Refining Co.

# Utilization of Waste Sulphite Liquor

By **BJARNE JOHNSEN** and **R. W. HOVEY**, Forest Products Laboratories of Canada, Montreal.

It is more or less commonly thought that the work of a laboratory staff is to mess around with chemicals, test-tubes and various materials till something happens—or fails to happen. There is a much broader field of work than that, and an excellent example of another important line of service is the accomplishment of two members of the staff of the Forest Products Laboratory of Canada of a difficult piece of literary research. Science is said to be organized in common sense, and the laboratories believe the motto can well be reversed on the basis that it is common sense to organize all the science available before tackling a proposition. With this in mind, they collected, assembled, translated, abstracted and classified all the available literature on the subject of the "Utilization of Waste Sulphite Liquor," and the result is Bulletin No. 66 of the Forestry Branch, Department of the Interior.

The bulletin contains 195 pages, and the abstracts of articles, books and patents are grouped under appropriate chapter headings in chronological order. The introductions to these chapters so well epitomize the information in the abstracts and so well indicate the possibilities in a number of important directions that it seems decidedly worth while to give this important subject and this fine contribution to its literature what publicity we may, by reprinting a large part of these paragraphs. To those in whom an interest is aroused, we would say that the bulletin can be obtained from the Forestry Branch, Ottawa, for 50 cents.

A few typographical errors will be found in the bulletin, but a technical man will not be bothered with a misplaced parenthesis in the formula for calcium bisulphite.

Let us skip the table of equivalent values of foreign units of weight, measure and coinage, for the present, and begin with the Preface, in which the authors explain the reason for their work.

## Preface.

The efforts in the direction of eliminating industrial waste by proper utilization of the raw material have in recent years drawn much attention to the utilization of the waste liquor from the manufacture of sulphite pulp. In Canada very little progress has been made towards the solution of this problem, and no doubt one of the reasons for this is the lack of information with regard to what has already been accomplished along these lines. This is very natural when we consider that the data on this subject are distributed over an enormous field of literature, especially foreign literature. It is the object of this publication to condense all available information into a form in which it will be of the greatest usefulness to the industry as well as to those who wish to go into research work.

In 1910 M. Muller published a book in German "Die Literatur der Sulfit-Blauge," which contained references to German literature on this subject and on allied problems. A continuation of this work up to the end of 1913 was published by Muller in 1914, and both these publications have been of great service in the

preparation of this bulletin. Considering that much of the literature referred to is not available at the present time, and that most of the articles are only directly available at the large libraries, the most important abstracts have been made as complete as possible. The information has been conveniently arranged in chapters, according to the nature of the recovered products, and a short discussion has been added in the form of an introduction to each of the more important chapters.

In these discussions valuable information obtained from the various industries and from special authorities has been used, for which the authors wish to express their thanks. Acknowledgment is due to Prof. J. A. McRae, of Queen's University, who made a preliminary survey of a portion of this literature in the summer of 1915. The writers are also indebted to Mr. O. F. Bryant, chief of the Division of Pulp and Paper of the Forest Products Laboratories, for valuable assistance rendered in the preparation of this bulletin, and also to Mr. C. B. Thorne, of the Riordon Company, and Mr. G. F. Steele, of the Canadian Export Paper Company, for the loan of files of technical journals.

## Introduction.

The Canadian sulphite pulp industry consumed in 1916, 728,000 cords of pulpwood (see Forestry Branch Bulletin No. 62 B: Pulpwood, 1916). At least one-half of the dry weight of this wood or considerably more than 1,000 tons of wood substance, therefore, was contained in the waste sulphite liquor which was discharged every day from the mills as a useless waste. This figure is sufficient to show how significant it is for all wood-pulp producing countries to eliminate this waste of material by turning the valuable organic products contained in the liquor into valuable products. That the importance of a proper utilization of the waste liquor has been fully recognized is shown by the great number of references contained in this publication, the author register of which contains approximately 350 names of persons who have reported officially on this subject. But in spite of the large amount of work that has already been carried out in connection with this question and notwithstanding the fact that a few processes for the utilization of waste sulphite liquor have gained industrial importance in some countries, the problem is far from being solved. It can not be considered to be solved before a process or a combination of processes is established which will utilize all the substances in the liquor so that products will be derived therefrom in an economical way and in a quantity and quality which will enable them to compete with present products on the market.

The first difficulty in complete utilization of the liquor is presented by the fact that only about 40 per cent. of the total liquor will drain off from the pulp without special arrangements for forced draining, and even with such equipment it would probably be difficult to recover more than 60 per cent. The remaining portions must be removed by water, which means

a further dilution and therefore an appreciable increase of the volume, requiring large-sized apparatus for handling.

It is of great interest, therefore, to prevent a further dilution of the already very dilute liquor, as most of the processes of utilization call for a concentration of the liquor to a certain density. The fact that the economy of many of these processes largely depends upon the cost of evaporation, as the 10 tons of liquor obtained per ton of pulp contain only 11 to 12 per cent. of solid substances, has made the question of evaporation one of the most important in the discussion of the waste sulphite liquor problem. Under "Evaporation" (p. 162 of the bulletin), references have been made to the various methods of evaporation which are as a rule carried out in connection with the simultaneous recovery of sulphurous acid, but it may be of interest here to point out a few principles of removing the excess of water, which are now in the foreground of the discussion of this point. One of the processes of concentration consists of atomizing the liquor at 100° C., which then in that form is mixed with the hot flue gases at about 270° C. The flue gases are thereby assumed to be cooled down to about 180° C., at which temperature one cubic metre of the gases should be capable of taking up and carrying off 1,000 grams of water. The suitability of this principle for sulphite liquors is apparently not sufficiently known to be reported on here.

A new evaporator has recently been built by Soderlund-Boberg, which is claimed to give a most efficient utilization of the heat. The idea of this evaporator is to compress slightly the vapors from the liquor, whereby the temperature of these is raised a few degrees and the heat from the compressed warm steam can be used for the evaporation of further quantities of liquor. Finally, it is worth mentioning the removal of water by freezing as suggested by Oman for the Scandinavian countries with their comparatively cheap water power. The economy of this progress has not been reported on in detail.

Among the processes for utilization of waste sulphite liquor only a few are of immediate practical interest to Canada. The manufacture of tanning materials is one of these. The processes of manufacturing have already been reported on, and also the suitability of this material for tanning purposes. It will only be mentioned here that Canada imports tannin extracts from sulphite liquor, at a price ranging from three-quarters of a cent to one cent per pound, which are used to a large extent in Canadian tanneries in the preparation of certain leathers, chiefly sole leather.

The use of sulphite waste liquor as a road and dust binder and as a binder for powdered materials such as peat would seem to be of importance to Canada.

The manufacture of ethyl alcohol from waste sulphite liquor is discussed on page 106, and the calculations, which are based upon the experience of operating sulphite spirit plants give a manufacturing cost of \$0.185 to \$0.32 per Imperial gallon, which is considerably less than the cost of production of alcohol from grain. This has been stated by Brecker (in *J. Ind. Eng. Chem.*, vol 9 (1917), p. 612), for 1916 to be about \$0.48 per Imperial gallon 90 per cent spirit in the United States, and has been estimated somewhat higher for Canada (about \$0.60). The main question is therefore, whether there is a sufficient market for this alcohol which without special purification contains certain impurities, especially methyl alcohol (about 3

per cent.) Recent investigations by the United States Geological Survey (1912) reported on in the United States Bulletin No. 392, and also experiments made in Europe, prove that the alcohol can be used with great advantage for motive power. United States Bulletin No. 392 contains details of this point and in Hagglund's book on Alcohol from Waste Sulphite Liquor, referred to on page 122, an interesting discussion of this problem is contained. (A full translation can be had from the Pulp and Paper Magazine for 25 cents.) It has been found that in motors of special construction a very efficient utilization of heat is obtained. This is at least the case with stationary motors of low speed (not above 300 revolutions per minute) which can give a heat efficiency of 33 per cent. in the case of spirit motors, while the heat efficiency in benzine motors as a rule is about 23 per cent. This good result is obtained only when the compression ratio of 10 to 1 is used in the alcohol motor against 4 to 1 with the benzine motor and when cooling water of a suitable temperature, namely about 100° C., is used. But this special alcohol motor with high compression cannot be used for high speed motors in vehicles, and it is a decided drawback that the alcohol motor cannot be used for benzine, without alterations. The usual benzine motor can, however, be operated with alcohol if slight alterations are made with the carburetting device in order to obtain the most favorable proportion of the air-alcohol mixture. The efficiency is considerably increased if the air is preheated by utilizing the heat in the exhaust of the motor. One disadvantage is presented in regard to the starting of the motor with alcohol or the usual alcohol-benzol mixture. It is necessary in this case to start the motor with benzine before using the alcohol, which makes two containers and two carburetors necessary.

Canada produced in the calendar year 1916, 7.5 million gallons of crude petroleum valued at \$392,300. The imports of crude and refined petroleum were about 290 million gallons valued at about \$14,000,000. It can be seen that Canada is dependent on foreign sources for her supplies of petroleum and petroleum products. In 1916 the imports of refined and illuminating oils amounted to over 8,000,000 gallons valued at \$540,000 and during the same year 18,000,000 gallons of gasoline were imported. If industrial alcohol could be produced economically in Canada it would mean a saving in imports of over \$4,000,000.

On the basis of a manufacturing cost of \$0.185 to \$0.32 per Imperial gallon for 100 per cent. alcohol from waste sulphite liquor there ought to be some hope, if suitable markets and legislation were provided, to introduce this alcohol for industrial purposes. The total production of alcohol from waste sulphite liquor would be about 3,320,000 gallons of absolute alcohol, which would assist in freeing Canada from dependence on foreign sources as well as utilize a waste product.

The manufacture of alcohol from waste sulphite liquor does not solve the waste liquor problem completely as only about 15-20 per cent. of the total solid of the liquor is utilized. But the residual liquor from the alcohol process may be made useful by employing one of the other processes, for instance in producing binding material, fuel, or using the dry substances for destructive distillation.

The use of waste sulphite liquor products for cattle food has not given very satisfactory results, and as a fertilizer the waste liquor has only an indirect value.

as it contains the chief chemicals required of a good fertilizer, namely nitrogen and phosphate, in very small quantities. It may, however, be useful in mixture with other products such as cyanamide, and may improve a soil poor in humus on account of its organic substances which form a good medium for the growth of nitrogen-fixing bacteria.

As a mordant the sulphite lignin or more correctly the substances precipitated by albumin or gelatin or salted out with sulphate or chloride of sodium, have been proposed under names such as lignosin and lignorosin. Of theoretical interest, but still without any practical value, are the condensation products with aromatic amines and the preparation of azo-dyes by coupling aromatic di-azo compounds with lignin sulphonic acid or its salts, obtained from waste sulphite liquor.

Recently it was suggested that sulphur dyestuffs might be prepared by heating sulphonic acids or sulfonates with alkali sulphides or other sulphur-containing substances, dissolving the product in water and precipitating with acid, but all the attempts in producing dyestuffs from the waste sulphite liquor are still limited to laboratory experiments.

The precipitation of organic substances at high temperature and pressure as suggested by Strehlenert, for use as a fuel or for destructive distillation, is probably, in the present form, not of immediate interest to Canada, but the development of this very interesting process should be followed with the greatest interest by the sulphite pulp manufacturers. It is evident from the facts collected in this publication that only very few of the proposed processes have reached any industrial importance and that there is an immense field open for scientific investigation and practical application before the problem is solved.

A research laboratory has recently been established in Sweden for the purpose of investigating the waste sulphite liquor problem. This laboratory will carry on research on the more important problems connected with the utilization of the waste liquor and will endeavor to work out new methods for its utilization.

#### Composition.

Considering the importance of an exact knowledge of the raw materials used in any chemical process, it is surprising that the great sulphite industry reached such a point of perfection before the nature of the chief raw material, the wood, had been thoroughly investigated. The development of special methods for wood analysis in the last few years has allowed a more intimate study of the constitution of the woods and much important information has been secured regarding the characteristics of various species. However our knowledge of the exact composition of the woods used in the sulphite pulp industry and, therefore, of the details of the cooking process is still too limited to permit of any definite conclusions with regard to the apparently very complicated composition of the waste sulphite liquor. On the other hand considerable work has been done by the most able investigators to determine the nature of the substances present in the waste liquor. The results of these investigations, which date back to the early years of this industry, not only furnish a valuable material for a better understanding of the cooking process as well as of the chemical characteristics of the wood but they are also of the greatest importance in the discussion of the value of certain processes for utilization of the waste sulphite liquor.

The chief constituents of European spruce wood are according to Klason:—

Cellulose. . . . .	about 50 per cent.
Carbohydrates. . . . .	“ 15 “
Lignin. . . . .	“ 30 “
Protein . . . . .	“ 0.7 “
Rosin and fat . . . . .	“ 3.3 “

These figures no doubt give an excellent idea of the nature of the average wood material employed in European mills. But there is less uniformity in this raw material on the American Continent, due to the employment of different species such as black, red, and white spruce, balsam fir, hemlock, etc., which vary considerably with regard to their chemical composition.

The following table contains average values for the ordinary Canadian pulp woods:—

	Cellulose. %	Lignin. %	Resin. %	Pentosan. %
White spruce . . . .	55	26	1.0	11
Black spruce . . . .	55	26	0.75	11
Balsam fir . . . . .	51	29	1.50	11
Hemlock. . . . .	49	26	1.75	12

The cellulose is determined by treating the wood, after removal of resins, with acetic acid in glycerin followed by the usual chlorination method, as suggested by Cross and Bevan. This cellulose is not absolutely identical with cotton cellulose, as it still gives the furfural reaction due to the presence of substances which are apparently so intimately attached to the cellulose that they can not be removed without partly destroying the cellulose itself and are not removed even at the high temperature and pressure prevailing in the sulphite digester. In fact, it has been found that the amount of furfural-yielding substances in the cellulose residue after chlorination treatment corresponds to that of a high-grade sulphite pulp, about 70 per cent. of the total of these substances present in the wood being removed in the cooking process as well as by this method of cellulose determinations. As the other impurities, chiefly lignin in both cases, can be completely dissolved out, the figures given for cellulose may be regarded as correct values for pulp obtainable. The lignin is determined by dissolving out all the other substances with 72 per cent. sulphuric acid after the resins have been removed. The values for pentosans are calculated from the yield of furfural from the original wood, making allowance for those substances still remaining in the cellulose residue which gives the furfural reaction. This, of course, is not absolutely correct, as part of the furfural may be traced back to other substances such as pentoses, furfuroids, etc., but there is no reason to believe that there is much variation in these substances in the different species as the furfural yield is practically the same in all these woods. Assuming Klason's value of 0.7 per cent. protein for these woods we obtain a good idea of their chief constituents. It must be remembered that the values given in the table are by no means absolute for all trees of the same species. It has been found that the cellulose content varies in the same tree with the distance from the ground and that in white spruce two samples taken at a distance of 48 feet apart show a difference in cellulose of as much as 4 per cent. There are also slight variations in the resin content of different parts of the same tree. The lignin content seems to increase with the distance from the ground, but not in proportion to the decrease in cellulose. The remainder of non-cellulose substances in the wood rep-

resents chiefly lower carbohydrates which are easily hydrolyzed and can be partially dissolved out with boiling water. The nature of these substances has not been sufficiently studied although they are apparently of great importance, furnishing as it seems the chief raw material for the fermentable sugar in the waste liquor. Schorger (J. Ind. Eng. Chem., vol. 9 (1917), p. 554) found that the coniferous woods contain appreciable quantities of mannan and discovered in one white spruce as much as 7 per cent. of this sugar. Klason, however, found only 2.5 per cent. mannose, but 7.9 per cent. glucose and 1.3 per cent. galactose. It was mentioned above that high-grade sulphite pulps contain very little or no lignin, that, further, a large proportion of the furfural-yielding substances and other lower carbohydrates are removed by hydrolysis in the cooking process. The resins and fats are only incompletely removed. It is therefore possible by means of these analytical data to form an opinion regarding the substances that may be expected in the waste liquor, but the quantity of these substances will naturally depend on many factors such as the species, the size of the wood, and cooking conditions such as condensation, relieving, temperature, and pressure. The quantity of fermentable sugar especially may depend largely on the last two factors, and must evidently be regarded as the residue of sugar present in the wood or formed at an early stage of the cooking process. Great differences would therefore be expected in liquors from Ritter-Kellner cooks as compared with those obtained by the Mitscherlich process, due to the higher pressure and temperature in the former. The variations in method of cooking by the Ritter-Kellner process may also account for the variations in the results arrived at by different investigators.

Another point which seems to be of importance is that the liquor may change a good deal when left standing for a considerable period. As the liquors in most cases must be used immediately after the end of the cook the analysis of the fresh waste liquor will be of most interest.

During the process of cooking, liquor as well as gas is relieved from time to time. In this way large quantities of sulphurous acid escape and are recovered by special apparatus and returned to the acid system. Besides sulphurous acid the vapors also contain other volatile products which can be condensed in special apparatus and purified. Bergstrom found that the condensate thus obtained at a certain period of the cook, amounting to 400-600 litres per ton of pulp (79-120 gallons per short ton), contains, besides about 100 grams (0.22 pound) of sulphurous acid, 5.5.5 grams of methyl alcohol per litre, which is equivalent to about 2.6 kilograms per ton of pulp or 5.2 pounds per short ton. The oil which floats on the top of the condensate is a complex mixture consisting largely of cymene and containing a small quantity of furfural and a solid terpene alcohol.

The crude alcohol obtained from the condensate contains acetone, acetaldehyde, and other substances such as traces of acetic and formic acids, but the alcohol can easily be purified. From the oil cymol can readily be produced in a pure state and furfural may be obtained in small quantities and purified.

Only about one-third of the total methyl alcohol formed in the cooking process is present in the condensed vapors. The quantity of methyl alcohol as well as of the other substances depends mainly upon the method of relieving and the temperature and pressure, at the time of blowing. Therefore, most of these vola-

tile substances can be found in the waste liquor in greater or less amounts, depending upon the method of cooking. For example it has been found that the furfural content of the Ritter-Kellner liquor is considerably higher than in the Mitscherlich liquor; in fact, the difference is so great that it may serve as a qualitative reaction for the identification of these liquors.

The waste liquor, which has a specific gravity of about 1.05 and gives an acid reaction, contains about 12 per cent organic and 1-1.5 per cent inorganic substances. The dry residue, in other words, contains 10-15 per cent. of ash. Of the 3-10 per cent. of sulphur present in the liquor only 2 per cent. remains in the ash mainly as  $\text{CaSO}_4$  and  $\text{CaS}$ , as most of it escapes as  $\text{SO}_2$  when the liquor is heated. There is always a small quantity of sulphurous acid in the liquor in the free form and loosely combined with sugar, so that it may be removed to a large extent by heating with or without the addition of an acid. Besides sulphurous acid the liquor also contains small quantities of sulphuric acid, acetic and formic acids, oxalic acid, and traces of citric acid. Among the other substances detected in small quantities in the waste sulphite liquor, according to Tollens and Lindsey, are vanillin, identified by the odor test, and succinic and protocatechuic acid identified by their decomposition products, pyrorole and pyrocatechin. In the rectification of alcohol from the waste liquor a reddish-brown oil separates out from which Klason and Segerfelt recovered optically inactive borneol similar to that obtained by treating turpentine with sulphuric acid. The borneol may be formed in the digestion process from bornyl acetate (or a similar ester) originally present in the volatile oils of the wood.

Cross and Bevan discovered that when glue is added to the waste liquor a precipitate is obtained which is soluble in alkali or sulphites and which may serve as a substitute for rosin size, since the solution may be precipitated by aluminium sulphate. This behavior towards animal glue has been regarded as a reaction of tannin compounds, but it is claimed by the tannin industry that if tannin is present at all it must be in a very small quantity.

The carbohydrates and the lignin are the sources of the most important constituents of the waste liquor, namely, the sugars and the calcium salt of the ligno-sulphonic acid.

The liquor gives the reaction of carbohydrates, reduces Fehling's solution strongly and also dyestuffs and chromium salts. Further, it gives an osazone precipitate with phenyl hydrazine and yields furfural on distillation with hydrochloric acid. Krause, who studied the sugars in the liquor from a Mitscherlich cook (indirect cooking) and from a Ritter-Kellner cook (direct cooking), obtained the following results:

	Ritter-Kellner %	Mitscherlich. %
Total sugars . . . . .	1.47	1.48
Pentoses . . . . .	0.41	0.47
Mannose . . . . .	0.48	0.48
Galactose . . . . .	0.01	0.01
Fructose . . . . .	0.25	0.28
Dextrose . . . . .	trace	....

More recently Klason has published some results of his investigations of the sugars present in a Ritter-Kellner liquor which differ considerably from those

of the waste liquor, as is shown in the following table:

	%
Mannose . . . . .	0.526
Galactose . . . . .	0.279
Glucose . . . . .	1.65
Arabinose . . . . .	0.90

Although the fermentable sugars represent only a very small percentage of the organic substances in the waste liquor they form the raw material for the most promising processes for its utilization at the present time, namely the production of alcohol. By far the greater proportion of the solid matter in the liquor is present as a lignin-calcium compound, the lignin substance of the wood combining with the sulphurous acid during the cooking process to form sulphonic acids. The calcium compound of these sulphonic acids may be precipitated from the concentrated liquor by alcohol, or by sodium chloride or magnesium sulphate. Concentrated mineral acids and lead acetate also precipitate the salt. The purification of the salt, however, is very difficult as it does not crystallize from its solutions. The compounds obtained by precipitation have been analyzed by various investigators and formulae for the salt and for lignin-sulphonic acid, as well as for lignin, have been deduced from the results obtained. The most important investigations on this subject have been carried out by Klason, and the interesting results of these investigations will be found in the literature, especially his book "Beitrage Zur Kenntniss der Chemischen Zusammensetzung der Fichtenholzes" ("Contribution to the Knowledge of the Chemical Composition of Spruce Wood.") Klason succeeded in separating in a high state of purity the barium salt of the lignin-sulphonic acid in the following manner: The liquor was concentrated in vacuo till nearly dry and the residue dissolved, by which means part of the gypsum and sulphite were separated out. The liquor was then neutralized with calcium carbonate and crystallized calcium chloride was added as long as it went into solution, in which manner a thick precipitate was formed. The liquor and precipitate were then boiled for 3 hours, after which the precipitate was separated out and washed with alcohol. In this way only about one-half of the calcium salts of the liquor was obtained. In order to transform this salt into a barium salt, sulphuric acid was added in a quantity corresponding to the amount of lime present. The liquor was then concentrated at ordinary temperature to a thick consistency, whereupon alcohol was added. The gypsum was separated out and the alcohol evaporated off at ordinary temperature. The liquid was then diluted with water and neutralized with barium hydrate, the amount required having been previously determined by titration. As it is usually difficult to filter the liquid, alcohol was carefully added until a precipitate was just formed. Before the addition of alcohol the liquor was allowed to stand till all barium sulphate formed had settled. The barium ligno-sulphonate was precipitated from the clear solution by the addition of alcohol. According to Klason the analysis of this salt points to the formula  $C_{10}H_{14}O_4 \cdot S \cdot Ba$ . and accordingly the lignin must have the composition  $C_{10}H_{14}O_4 - 2CH_2 + O$ ; the lignin represents chiefly a  $C_{10}H_{14}O_4$  has been found to be at least 6,000, the formula  $C_{10}H_{14}O_4$ . It has been mentioned above that only about one-half of the lignin-calcium compound is precipitated from the waste liquor. From

the high methoxy content of the precipitate and that of the wood, Klason concludes that there is a second lignin in admixture with the first, with no, or at least a very low methoxy content and a higher hydroxyl content, and has suggested the formula  $C_{28}H_{38}O_{12}$  ( $C_{10}H_{14}O_4 \cdot 2C_{11}H_2 + O$ ); the lignin represents chiefly a condensation product of coniferyl alcohol and hydroxy coniferyl alcohol, the groups apparently having the same position as in gallic acid, namely, 1, 3, 4, and 5.

In the formation of the sulphonic-acid salt in the cooking process it is stated that two molecules of  $SO_2$  are added to the lignin, forming a sulphonic acid. Besides this the lignin can combine with two more  $SO_2$  molecules one of which is very loosely attached so that it may be partially titrated with iodine at ordinary temperature, whereas the second molecule is more closely combined but can be separated quantitatively by evaporation and the addition of barium chloride to the liquor. Klason therefore assumes that the lignin complex has three ethylene bonds, two of which bring about the intimate addition of two  $SO_2$  molecules forming lignin sulphonic acid, the third group binding  $SO_2$  more loosely. The fourth  $SO_2$  molecule is attached to an active carbonyl (aldehyde or ketone group) so loosely that the sulphurous acid can be separated from it at ordinary temperature. The formula for lignin which Klason has proposed is meant to represent a summary of facts concerning the reactions of the lignin compound, and must be confirmed by future exact analytical investigations. It has, however, as Schwalbe remarks, "an advantage which should not be undervalued, namely that Klason's speculations give a splendid working hypothesis for the sulphite cooking process, for which it is really intended."

Wichelhaus has given the following table of the quantitative composition of a waste sulphite liquor:--

	Grams per litre
Dry residue . . . . .	82.8350
a) organic . . . . .	68.3440
b) inorganic . . . . .	14.4910
$H_2SO_4$ . . . . .	3.4340
$SO_2$ combined . . . . .	5.8420
$SO_2$ free . . . . .	2.5600
Cl . . . . .	0.0240
$SiO_2$ . . . . .	0.0024
$Fe_2O_3$ and $Al_2O_3$ . . . . .	0.0102
CaO . . . . .	7.1760
MgO . . . . .	0.0040
Alkalies . . . . .	0.0192
Specific gravity . . . . .	1.0390
Reaction . . . . .	Acid

Concerning the nature of the organic substances Klason has given the following summary of the waste products calculated on one metric ton of pulp:--

	Liquor I.	Liquor II.	Liquor I.	Liquor II.
	Kilo-grams.	Kilo-grams.	Pounds per Short Ton.	Pounds per Short Ton.
Lignin . . . . .	644	600	1,287	1,200
Carbohydrates . . . . .	311	325	622	650
Proteins . . . . .	15.5	15	31	30
Sulphurous acid combined with the lignin..	235	200	470	400
Lime . . . . .	102	90	204	280
	1,380	1,260	2,760	2,520

(To be Continued.)

## The Private History of a Drier Felt.

(From an article by W. G. Christie, of John Christie Co., Toronto, in the Spanish River News.)

We have no record of when these felts were first used on paper machines, or who was responsible for the construction of same, but the manufacture of these felts has, we believe, progressed in much the same manner as the manufacture of paper. Several years ago, when paper machines were made in very narrow widths as compared to the mammoth machines of to-day, and when they were operated at much lower rates of speed, a Dryer Felt was built along much lighter lines. As wider and faster running paper machines were used, it was found necessary to construct Dryer Felts in much heavier weights, but the principal of construction, outside of the many improvements which have been made in the various machines used in the manufacture of Cotton Dryer Felts, is very much the same as that employed years ago.

The title of "Felt," as applied to this cotton fabric, does not correctly represent the texture of the cloth, as a felt proper is usually a matted, rather than a woven fabric, while a Cotton Dryer Felt is a plain weave cotton duck of an exceptionally heavy construction as compared with the usual range of woven cotton goods. This fabric, has, however, been called a Dryer Felt for so long that its name will probably never be changed and for the purpose of this small sketch we shall so designate it.

These cotton felts are manufactured only from a good grade of American-grown white cotton and should contain a staple of not less than an inch long if the strength of the fabric is to be maintained. The raw cotton is received at the mill in much the same manner as other grades of raw materials used in the manufacture of merchandise. It is packed in compressed bales averaging 500 pounds in weight.

In the first process, a number of these bales are opened and the contents thoroughly mixed. This process is called, "Opening and Beating," and in addition to eliminating any sand, dirt or foreign matter that might be in the raw cotton, it also averages any variation of color, staple, etc., and at the same time disintegrates the compact masses of fibre into a fluffy roll of cotton. This is then gathered by a machine into a roll or "Lap," which is subject to a carding process to remove all short and immature fibres and other objectionable materials which might have passed the beating process.

The carding and subsequent processes also arrange the now clean, individual fibres in a more or less parallel fashion into a soft rope-like form which is called roving, and is further prepared on machines which strengthen the rope-like formation and at the same time subjects it to a twisting operation forming the basis of the yarn. The yarn is next produced by putting the roving through the spinning process in which the single yarn is made by a further drawing out operation and twisting at a very high rate of speed as the finished yarn is wound on the bobbins. In order to produce plied yarns, these bobbins of single yarns are twisted together in multiple and the resulting finished yarn forms the basis of Warp and Filling, which the heavy looms weave into the fabric commonly called Cotton Dryer Felt.

The looms on which these goods are woven are of

a very heavy type, necessary to stand the strain of taking out the stretch in the thousands of yarn ends forming the warp, and to produce an even, firmly made, finished piece of goods. After the felt is taken from the loom, it is subjected to a careful inspection for any defects of manufacture and after being passed is packed in burlap for shipment.

A Dryer Felt made as above will not deteriorate in strength or quality for a long time, if given proper care. It should always be stored in a dry place, as dampness will cause mildew and subsequent rotting of the material.

In your letter, you have asked us to give you some of the abuses a Dryer Felt is often subjected to. These should be well known to all paper mill men, but we would like to enlarge on one or two points that affect the life of a Cotton Dryer Felt. Great care should be taken in handling these felts especially after the burlap covering has been removed, and when they are being placed on machines. They should be applied evenly so that no wrinkles may be developed. It is needless to dwell on the damage and delay caused by a wrinkled felt. No acids of any kind should be allowed to come in contact with these felts as these are most deadly in a cotton fabric.

### DIRECTORY OF CANADIAN CHEMICAL INDUSTRIES.

The Dominion Bureau of Statistics has just issued a Directory of the Chemical Industries in Canada, listing the names, addresses and products of nearly five hundred Canadian firms manufacturing chemicals, or other products in which the processes used are essentially dependent upon the agency of chemical change.

This publication will undoubtedly fill a long felt want and should be of considerable value to the general public as well as to the trade. It has come to be a well accepted truth that scientific progress is essential to the true development and material welfare of any country, and in Canada, where many of our natural resources are as yet almost unknown, the importance of laying sound foundations cannot be over-estimated. Some of the possibilities of industrial chemical development were made apparent by the remarkable accomplishments along these lines in Canada during the war, and consequently popular sentiment now favours the idea that this country should, to a large extent, be freed from dependence upon other countries for our chemical needs. In order that this idea might be guided along well advised lines, it was essential that a survey of our chemical industries should be made, and the bulletin now referred to represents the first phase of this work.

The Directory is in two divisions: (1) an alphabetical list of the various concerns, the head office address of each, together with a detailed list of their products, including in the latter chemicals and products resulting from chemical processes; (2) a list alphabetically arranged of the chemical products manufactured in Canada showing the names of the various firms engaged in their manufacture. Two errors are noted: Dominion Paper Co. make sulphate pulp, and Provincial Paper Mills, soda pulp.

The Directory has been published in a limited edition, and as a great number of requests for copies have already been received, it is probable that the available supply will soon be taken up. Requests from those interested should be addressed to the Dominion Bureau of Statistics, Ottawa.

## Expect Big China Clay Trade With U. S. and Canada

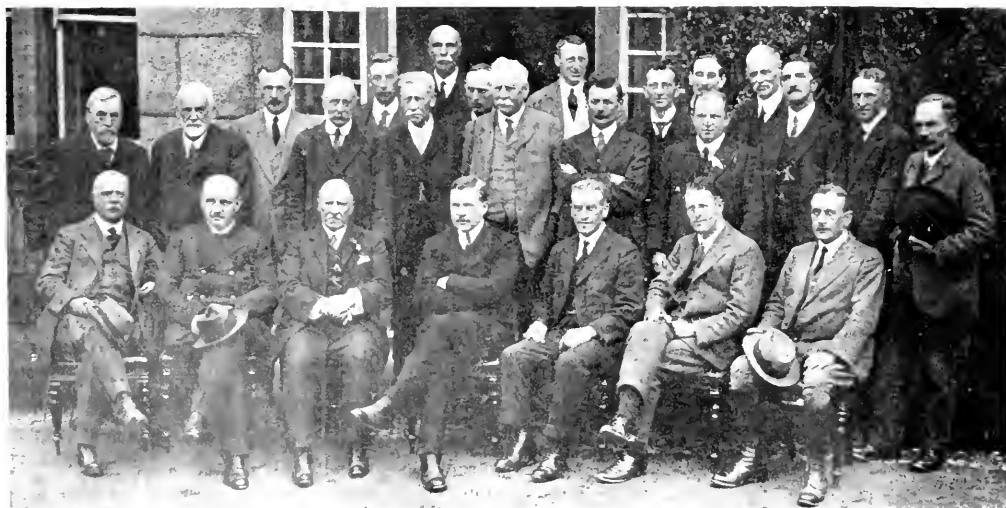
The accompanying photograph was taken outside the registered offices of the Associated China Clays, Ltd., at their last meeting, a mansion known as the "Old House," at St. Austell.

Before the war a considerable business was done with Russia, but since that country has been in such a turmoil that market for clay has vanished and the markets of Finland, Scandinavia, and also Italy are not as good as they were. Germany before she went to war was a great consumer and for years had purchased considerably over a quarter million sterling of clay from Cornwall. The one bright factor, however, has been the trade with Canada and the United States of America, and now the war is over, with better shipping facilities, a great increase is expected by those vitally associated with the industry. The national demands for shipping have severely hindered the progress of the Cornish China clay trade with Canada and the United States, and no doubt the tremendous increase in wages and coal more than doubled in cost have had an effect in raising the cost of production to the detriment of our overseas business. However, the powers of the Associated China Clays, Ltd., are wide and comprehensive. Not only are the selling prices fixed but shipping facilities are regulated and a Purchasing Board or Department is suggested as an establishment which should be a great benefit to the producers and consumers as a whole. The "Cartelle" is very fortunate in having one other excellent combination, and that is within its circle of management, and the manner in which the affairs have been administered has given the utmost satisfaction to all concerned.

The Hon. H. D. McLaren, M.P., O.B.E., proprietor of the McLaren China Clay Works and a distinguished representative of Messrs. H. D. Poelin & Co., Ltd., of Manchester, has been chosen Mr. Higman's succe-

see as chairman, and a gentleman of such wide commercial experience should prove a great acquisition to the association and industry generally. The managing directors are Mr. T. Medland Stocker, Mr. J. S. Lovering and Mr. J. W. Higman, and the secretary is Mr. Samuel Benson, who is also the secretary to the Joint National Industrial Council.

Reading from left to right: Front row: Messrs. J. Rogers, J.P. (J. Rogers & Co.); (2) T. Medland Stocker, J.P. (English China Clays, Ltd., Joint Managing Director); (3) John W. Higman, J.P., Joint Managing Director; (4) The Hon. H. D. McLaren, M.P., O.B.E., Chairman of the Associated China Clays, Ltd.; (5) Reginald Martin (Chairman English China Clays, Ltd.), Vice-Chairman of the Associated; (6) J. S. Lovering (John Lovering & Co.), Managing Director of the Associated; (7) Walter Sessions (English China Clays, Ltd.), Vice-Chairman of the Associated. Second row: Messrs. H. S. Hancock, D.C. (Candledown China Clay Works); James Perry, D.C. (The Burthorpe China Clay Works and Messrs. Dyer & Dalsy); Hart Nicholls, Jr. (The North Goonbarrow and others); John Lovering, J.P. (Messrs. John Lovering & Co., St. Austell); Wilfred Sessions (The Melbur China Clay Works); J. Fletcher Pagen (The Bodelva and Lantern China Clay Works); Richard J. Varcoe (The Goonvean; and the St. Dennis and Parkindillaek China Clay Works); W. Rose, J.P. (Messrs. North and Rose); Captain S. J. Dyer (Treviscoe, China Clay Works and Messrs. Singleton & Birch); E. J. Hancock (Mid-Cornwall China Clay Works), a Director of the Associated China Clays, Ltd.; T. Martin (Single Rose China Clay Works); Robert Varcoe (The Bloomdale China Clay Works); John Hooper (Anchor China Clay Syndicate); J. V. Rowe (Great Wheel Prosper China Clay and Stone Works); Captain L. S. Peters (Messrs. Parkyn & Peters). Back row: Messrs. W. Wedlake (St. Austell China Clay Works, Ltd.); J. Hoyle (Manchester China Clay Co., Ltd.); Samuel Benson, Secretary of the Associated China Clays Co., Ltd., and Secretary of the Joint National Industrial Council.



Officials and Directors of Associated China Clays, Ltd., in Front of "The Old House," St. Austell.



## Transportation Information

### To Relieve Car Shortage.

A recent article in the Pulp and Paper Magazine referred to the possibility of a shortage of cars for the movement of pulp and paper to U. S. points.

Some mills have already commenced to experience this shortage, and the matter was taken up with the Canadian Railway War Board. They advise that, while it is true the U. S. Lines have a large number of Canadian railway cars in their possession the Railway Administration at Washington is being urged to return same. In addition to this, orders have been placed by the Canadian Railway War Board with the United States Administration calling for delivery of 260 empty U. S. owned box cars per day to Canadian Lines in Eastern territory to protect the loading for U. S. points. The Washington authorities have promised to use every effort to meet this requirement, and no doubt the pulp and paper manufacturers will be able to obtain from the railways their proper share of these cars.

This situation emphasizes the need of continuing to load cars to the limit and to load and unload with utmost despatch.

### Steamer Sailings From Montreal.

The Canadian Pacific Railway issues a weekly list of proposed sailings from Montreal. This information will assist anyone contemplating an ocean shipment. Following are the published dates, which are subject to change without notice:—

To Liverpool.—Canada, White Star-Dominion Line, about August 6; Scandinavian, C.P.O.S. Line, about August 7; Minnedosa, C.P.O.S. Line, about August 8; Metagama, C.P.O.S. Line, about August 15.

To London.—Montezuma, C.P.O.S.-Furness Line (C.P.O.S.), about July 30; Mendip Range, C.P.O.S.-Furness Line (Furness), about July 30; Verbania, Cunard Line, about July 31; Scotian, C.P.O.S. Line, about August 6.

To Antwerp.—War Beryl, C.P.O.S.-Furness Line (C.P.O.S.), about July 29.

To Glasgow.—Holbrook, C.P.O.S. Line, about July 26; Saturnia, Anchor-Don Line, about August 13; Cassandra, Anchor-Don Line, about August 19.

To Avonmouth Dock (Bristol).—Tureconam, Dominion Line, about July 31.

To Manchester.—Manchester Corporation, Manchester Liners, about August 7; Manchester Hero, Manchester Liners, about August 17; Manchester Divilion, Manchester Liners, about August 30.

To Leith.—Cairn Gowan, Thomson Line, about August 8.

To Dunstan.—Cairnvalona, Thomson Line, about Aug. 2.

To Dublin.—Ramore Head, Head Line, about July 30; Lord Antrim, Head Line, about Aug. 10.

To Belfast.—Fanad Head, Head Line, about July 26; Milmore Head, Head Line, about Aug. 8.

To St. Nazaire (France).—Cape Corso, Can.-French Line, about Aug. 15.

To Havre (France).—Billster, Canadian Trans-Atlantic Line, about July 26; Lord DuFerin, Do., about Aug. 1; California, Do., about Aug. 7.

To Buenos Aires and Monte Video.—Canadian Seigneur, Can. Govt. Mer. Marine, Ltd., about July 30; Clan Skene, Houston Lines, about Aug. 15.

To Australasian Ports (Melbourne, Sydney, Auckland, Wellington, Lyttleton and Dunedin, Port Chalmers).—Wangaratta, New Zealand Shipping Co., about Aug. 15.

To Barbados and Trinidad.—Canadian Recruit, Can. Govt. Merchant Marine, Ltd., about Aug. 5.

To Charlottetown, St. Johns, Nfld.—A Steamer, Gulf of St. Lawrence Shipping & Trading Co., about Aug. 8.

P. S. Melvin, export freight agent, Board of Trade Building, Montreal.

In addition to the boats shown on the above sailing list, it is said that a considerable number of steamers being built on the Upper Lakes for the U. S. Shipping Board, are coming down at the rate of from two to six boats per week and loading at Montreal, principally for the United Kingdom.

The British Ministry is still reserving space equivalent to 70 per cent., and more on all regular liners for their own use, leaving only a small percentage available for commercial freight. The boats of the U. S. Shipping Board, however, are being filled, it is understood, with commercial freight, and bookings can be arranged through McLean, Kennedy and Company, Montreal.

So far as can be ascertained the rates being applied on these boats are the same as charged commercial freight on regular liners, which are at present to the United Kingdom \$1.50 per 100 pounds or 75c per cubic foot; to Antwerp 65c per cubic foot. France from \$25 to \$28 per ton weight or measurement, ship's option. The prevailing ocean rates at New York quoted by the U. S. Shipping Board are: the United Kingdom \$1 per 100 pounds, or 50c per cubic foot; Belgium and France \$1.25 per 100 pounds or 60c per cubic foot.

### THE ENDLESS FELT.

A chain is as strong as its weakest link; and it is the weak link that retards production. Likewise with the press felt, the speed at which it can be run efficiently depends in large measure on its openness, that is, the ability to get the water through, and a felt is as open as the seam or join. The join is the weak link. The filling up and felting of the join causes more felt trouble than any other factor in these days of fast running machines.

This filling up of the seam is easily explainable. The joined felt is woven so that the two ends must be joined by hand. The ends are taken out for a few inches and the warp threads are interwoven. To obtain the necessary strength this operation must be done with much care. But in all cases this part of the felt must necessarily be closer than the rest, and if opportunity offers at all will felt and fill up faster than the rest of the felt, in which case trouble ensues.

To overcome this obvious fault, a few felt manufacturers have for some time been weaving their felts endless, thereby obviating all possibility of seam trouble. Seam trouble is usually present on the wet-felts of fast-running news machines, and on felts for fine papers, so that it has been on these that the manufacturers have directed their efforts. So much success has been obtained that the machine tender has come to show a very pronounced preference for the endless felt. In addition to obviating seam trouble, the endless felt gives longer life, requires less washing, and will stand more pressure than the joined felt thereby requiring less steam on the dryer. Altogether, it is a forward step on the part of the felt maker.—Contributed by Bates & Innes, Limited, felt manufacturers.

## CANADA'S FORESTS WARRANT LARGER STAFF AT FOREST PRODUCTS LABORATORIES

The Forest Products Laboratories of Canada, at Ottawa, Ontario, have a staff recently from Mr. I. H. Boas, of Perth, Western Australia.

Mr. Boas stated he was making a tour of the civil engineering branch of the Government of the Australian Commonwealth, for the purpose of learning what other countries are doing to secure the proper utilization of forest products, with the object in view of establishing laboratories similar to the Forest Products Laboratories of Canada, located at Montreal, and the laboratories of the same name of the United States Government situated at Madison, Wis.

The first visits made by Mr. Boas were along the Pacific Coast. While in Vancouver, B.C., he studied the work as carried on there by the Forest Products Laboratories of Canada, Vancouver Branch, and also investigated lumbering operations along the coast. After passing through the western provinces he spent some time at the U. S. Forest Products Laboratories at Madison, Wis., looking into the various methods and processes in use there. He stated he was struck with the progressive way in which the various projects relative to forestry were dealt with, and in comparing the Forest Products Laboratories of Canada at Montreal with those at Madison, he wondered why Canada, with the third largest forest resources in the world should be receiving such little general and Government support. He noticed at Madison there were 250 employees—many scientifically trained men, all diving into the most vital problems in connection with the utilization of forest products whereas at the Montreal laboratories there were only about 30 employees. He found various comparisons of great value and hoped to learn from the shortcomings and mistakes that have been made and dare now being made with regard to the administration of the laboratories in Canada and the United States, so that these will not be repeated in Australia, where he will soon establish a Forest Products Laboratory.

In discussing the apparent lack of interest the Canadian Government were evincing in the research work appertaining to the utilization of forest products, he said:

"I hope that your government will see fit to so strengthen your laboratory that it can carry on the fine work it has begun in a more complete way than is now possible. A Government of a country with such vast forest wealth as Canada possesses cannot spend money more wisely than in scientific research. In investigating the many and various problems connected with this great asset."

"I have learned one thing fully during my visit to America, it is that scientific workers are awakening to the fact that they can demand more than has hitherto been granted them, and that the leading business concerns are endeavoring to do this and are showing it by their willingness to offer large salaries to attract technical men to their staffs. Unless the Government is anxious to the necessity of keeping men at the laboratories for long periods, the work undertaken must seriously suffer. I am going back to Australia to impress fully on my Government, for scientific work is the essential branch uninterrupted by a continuous stream of orders, and there is only one way of keeping the scientific staff and that is by making a salary commensurate with the wages paid by other industries for employing technically trained men."

Another fact that made an impression on the visitor was the importance of publicity in keeping up an interest in the work of the laboratories and in making their services most useful to the country. He was not of this opinion when he left Australia, but stated that he was fully convinced of the necessity for providing for this phase of the work.

When it is remembered how small the present forest resources of Australia are in comparison with those of Canada it says much for the enterprise and foresight of the Commonwealth Government in sending an investigator around the world as a preliminary to establishing a scientific research institution to investigate forest utilization problems. Mr. Boas also spent some time at the various government branches at Washington, D.C., and Canadian pulp and paper mills adjacent to Montreal.

After leaving Canada Mr. Boas proceeded to Europe, Great Britain and France, to collect all information obtainable bearing on the subject of wood utilization in all its various complexities so that he will know what has been done all over the world.

## COLOR IN NEWSPRINT PAPER.

By GEO ERSKIN, Grand Mere, P. Q.

Newsprint is generally referred to as white by the casual observer. While there are wide variations in the ordinarily accepted white shades, a true white such as seen in bleached fabrics presents a wide difference to even the "whitest" newsprint paper. Compared with a true bleached white the average news is quite blue, in fact, it is actually a "Blue-White." The materials used in making paper in their natural state, unbleached, produce a dull yellowish shade. To overcome this undesirable feature, blue and red dyes are usually employed, although dyes that might be referred to as Violet Blues when used alone produce a very attractive so-called white.

To fully appreciate the reference to Violet Blues one must understand the relationship between the various colors. This is illustrated in the "Spectrum," or in other words the decomposition of a ray of white light passed through a glass prism. Not only is the direction of the white ray changed, but it suffers dispersion. The picture obtained—the spectrum—if examined minutely will show the following colors, not sharply separated, but merging into one another, in the order named: Violet, Indigo, Blue, Green, Yellow, Orange, Red.

From the foregoing it may be seen that a blue dye while producing a shade that is actually a blue might be over towards the greenish side of the blue range. Such dyes require reds to counteract the greenish tinge. The various blue dyes produce various shades of blue from greenish to violet blues. As the resulting shades creep over to the violet or indigo side of the blue range less red is necessary. When the shade produced is violet to indigo then a green or greenish blue is necessary to counteract the reddish tinge. The Violet Blue above referred to is a dye which produces a shade about half-way between the middle of the blue line and the point where the blue merges into an indigo. This shade is the most attractive so-called white shade in newsprint paper. With such dyes the quantity necessary may be easily regulated to perfectly counteract the natural color of the stock and produce a sheet which unless compared directly with a true bleached white would be universally accepted as white paper.



# UNITED STATES NOTES

George King, formerly a salesman for the Gatti-McQuade Company of New York City, dealers in paper stock and paper makers' supplies, has been made the defendant in a damage suit now being tried in the Superior Court at Springfield, Mass., in which the Gatti-McQuade Company seeks \$110,000 damage from Mr. King for the latter's alleged failure to live up to the terms of an agreement he entered into with this firm. The paper jobbing company claims it put Mr. King on its payroll at a salary of \$10,000 a year on a contract running five years. It is also asserted by the plaintiff company that the salesman who is regarded as an expert in his line, that of selling rags and similar paper-making materials, had successfully built up a large and profitable business for P. Garvin, Inc., of Holyoke, Mass., dealers in like lines, and that he was engaged in view of the fact that he was considered the ablest salesman in and about Holyoke. Through Mr. King's failure to live up to the terms of his contract, the Gatti-McQuade Company claims a loss of approximately \$20,000 over and above the salary of the defendant during the period of employment, which was covered by the agreement of April, 1919, to March, 1924.

Michigan and northern Indiana paper mill superintendents entered the organization of the American Pulp and Paper Mill Superintendents' Association when at a recent meeting held at Kalamazoo, Michigan, a branch of the association representing the latter State was formed. Edward T. A. Coughlin, superintendent of the Monarch Paper Company's coating division, is chairman of the new branch; Luther A. Parker, superintendent of the Imperial Division of the Bryant Paper Company, is vice-chairman, and George H. Pountain, general superintendent of the Monarch Paper Company, is secretary-treasurer. The organization was launched about two months ago by superintendents representing nearly all the mills in the Wisconsin district who organized the initial branch at Appleton, Wis.

New York paper houses seem at the present time very much in need of good paper and pulp salesmen, both for the city territory and on the road. There are openings for such men at quite a few of the city's big paper concerns.

The American Paper Mills Corporation, recently incorporated in New York State with a capital stock of \$100,000 fully paid in, has just opened its offices at 38 Park Row and warehouse at 295-309 Lafayette Street, New York City, and its head, M. H. Freimark, formerly connected with the Beekman Card and Paper Company, announces that the new company is now ready for business. It will carry complete lines of coated, book, litho., bond and writing papers; post-cards, coated blanks, etc. Associated with Mr. Freimark as secretary of the company is Louis J. Samalman, who is well known to the trade as an auditor and credit man.

The dye hearings before the Ways and Means Committee of the House of Representatives came to an end last week with a summing up of the industry's situation, as viewed by the American dye manufacturers, by Joseph H. Choate, Jr., general counsel for the Chemi-

cal Foundation. Whether the American industry should be protected and by what means are the questions which the committee must decide, said Mr. Choate. Favorable action by the committee to the request for a licensing commission is confidently expected. Just when the committee's report will be made is not known. Present indications are that the committee as a whole is in favor of protecting the industry.

A new schedule of wage demands has been presented to the manufacturers by the paper workers of Holyoke, Mass., and vicinity. This schedule was formulated after a committee representing the workers had studied the reports of wages paid elsewhere throughout the country. An increase of 25 per cent is asked for all four workers. This increase, say the spokesmen for the workers, though apparently large, will do no more than bring the wages of the paper makers of the Holyoke vicinity up to a par with what is paid in other parts of the country. Preliminary conferences with the manufacturers looking to an adjustment of the matter were held last week.

Through a recently effected re-organization the Van Gorder ruling establishment of R. R. Van Gorder at Kalamazoo, Michigan, has become the VanGorder Company with a capital of \$50,000. The re-organized concern is to engage in the manufacture and sale of tablets and stationary, and it is to continue doing a general trade of commercial ruling. Mr. Van Gorder decided to form a corporation and increase the capital of the undertaking so as to properly take care of the large growth of his business in ruling contracts. His products are sent out regularly in carload lots to many of the leading commercial centres of the country. The new concern will operate in the ruling company's plant. The officers of the Van Gorder Company are as follows: President, R. R. Van Gorder; vice-president A. C. Barley; treasurer, George Putt, and secretary, Frank M. Blair.

The mills of the Nekoosa-Edwards Paper Company at Nekoosa and Port Edwards, Wis., are still closed, and the strike situation, which had its inception in a walkout of the men on June 23, remains unchanged. The strikers still insist upon the acceptance of their demands which call for an eight-hour day; a 5 per cent increase in wages with time and one-half overtime; the right of collective bargaining and the right to organize without interference. Company officials have refused to recognize the strike committee as a union committee and have dealt with it only as a shop committee. No compromises have been made by the company on any of the demands. It has offered, however, to submit the differences to a board of arbitration if no agreement can be reached through the discussion by committees representing the employes and the management.

## HOLYOKE SHUTDOWN AUGUST 3.

Notices have been sent out by the Holyoke Water Power Company that the annual shutting of the head gates to the company's canals would take place at 6 a.m. August 3, and that water should be let into the canals the morning of August 7.



## Technical Section



### STILL GROWING.

The acting secretary announces two new members elected to the Technical Section. They are Albert G. Durgin, and B. J. Waters, both with Spanish River Pulp & Paper Mills, Sault Ste. Marie, Ont.

### PULP AND PAPER EXHIBITS PLANNED FOR T. A. P. P. I. MEETING IN SEPTEMBER.

A local committee has been formed in Chicago to arrange for the Fall Meeting of the Technical Association of the pulp and paper industry in connection with the Fifth National Exposition of Chemical Industries at the Coliseum and First Regiment Armory during the week of September 22.

Thomas H. Savery, Jr., of 1630 Republic Building, Chicago, presided at a meeting of the committee held in his office at which Charles F. Roth, one of the managers of the exposition, was present. The meeting was called by James L. Carey, another Chicago member of T. A. P. P. I., who has been active in arranging preliminary details.

Among the matters discussed at the meeting were hotel accommodations, dates of meeting and headquarters at the exposition. It was decided to occupy as headquarters, the space at the exposition donated by the management. This is Booth No. 237, near the entrance to the conference room where all meetings will be held. The local committee will arrange for attendants in the booth and for registration. It was deemed inadvisable to select any particular hotel as headquarters, seeing that the hotels and the Association of Commerce promise ample accommodations, during the week of meeting, as well as because T. A. P. P. I. headquarters will be at the exposition, admission to which will be free to members who show their badges or other credentials. The meeting rooms in the Coliseum and First Regiment Armory, where the National Exposition of Chemical Industries will be held, will be sufficient to accommodate the members of T. A. P. P. I. and any committee meetings that may be necessary.

### Propose Visit to Madison.

Details of the proposed trip from Chicago to the Forest Products Laboratory at Madison, Wis., have not yet been arranged, but it is likely that a night train will be provided so that members can spend the entire day of Friday, September 26, in Madison, inspecting the laboratories and the State University.

The Forest Products Laboratory will have an interesting exhibit at the exposition in which will be shown the work that has been done on raw materials, products and by-products. Prominent among the exhibits will be the results of the pulp and paper investigations of the laboratory, the manufacture of ethyl alcohol from wood waste and sulphite waste liquor, increased production of acetate of lime in hard-wood distillation and naval stores investigation. In connection with this exhibit it is likely that an effort will be made to develop interest in the relation of forest and forest administration of waterpower, timber and other resources to general industrial development in neighboring regions.

At the headquarters of T. A. P. P. I. in the exposition building, it is planned to make an exhibit showing the processes from wood to paper with a related chart illustrative of the steps in the operations upon which may be placed sketches or photographs of the machinery used.

A generous invitation has been received by the local committee to visit the plant of Sears, Roebuck & Company to be the guests of the company for luncheon on one of the days of meeting. The local committee of arrangements has this invitation under consideration, and if it is accepted, as it is believed it will be, members will be asked to notify the committee promptly of their intention to attend.

A large attendance of western members is expected at the Fall Meeting, and it is hoped that an equal number of members from the east will be present. The meeting will open at the Conference room in the Coliseum, Chicago, on Wednesday, September 24.

### REVIEW OF RECENT LITERATURE.

**K-6. Regeneration of waste paper.** (Procédé et appareillage pour la regeneration des vieux papiers.) French patent No. 490,150 granted to the "Union française des Papeteries." *Le Papier*, 22, p. 152, 1919.—The paper is treated with a suitable amount of water, preferably hot, in a tank provided with agitators and knives to reduce it to a pulp. It is then washed with water alone on a metal screen inclined at a suitable angle to the horizontal. The water, being added in several portions, makes the pulp travel down the screen, and by the time it reaches the bottom it is completely freed from ink.—A. P.-C.

**K-10. Gelatin sizing.** (Procédé pour le collage en pâte à la gelatine.) German patent No. 306,688, class 55 c, group 2. *Le Papier*, 22, p. 155, 1919.—Gelatin, in the form of a jelly, is added to the pulp in the beater, there being sufficient affinity between the fibres and the gelatin to ensure perfect sizing on the paper machine. Formaldehyde or chrome alum may be added to harden the gelatin.—A. P.-C.

**L-4. Cardboard boxes for canned goods.** (Boîtes de conserves en carton). *Papierfabrikant*, Nov. 8, 1918, through *Le Papier*, 22, p. 149, 1919.—Experiments made in Norway have solved the problem from a mechanical point of view: but after a time the boxes rot inside. Experiments are being carried out whereby the waterproofing substance is incorporated with the pulp itself, and the results seem promising.—

**R-O. The paper industry in Ireland.** (*L'industrie du papier en Irlande*.) *Le Papier*, 22, p. 136, 1919.—The removal of the duties on paper in 1861 proved a heavy blow to the English and Irish paper industries, from which the latter never fully recovered owing to lack of capital to tide over the transition period. The greatest handicaps at present are the high price of coal and high freight rates. These might be overcome by the use of peat both in the mills and by the railroads. A mill in the South of Ireland has just completed the installation of the necessary equipment to make pulp from straw.—A. P.-C.

# PULP AND PAPER NEWS

Holidays for workers in the pulp and paper industry appear to have been quite general last Saturday. Some towns had parades, speeches and fireworks and others observed a period of silent rejoicing while some went about their business as usual.

The Bathurst town council has been allotted by the government of New Brunswick \$80,000 under the provisions of the "Housing Act, 1919."

J. D. Rue, who served as captain in the Ordnance division of the U.S. Army and is now connected with the Mead Pulp and Paper Co., is detailed to special work at Fraser Company's mill at Edmunston, N.B. Mr. Rue was formerly professor of Chemical Engineering at the University of Michigan and was in charge of the graduate courses in paper making subsidized by the mills in that state. Some fine work was done under his direction on the evaluation of clays.

In two days, five machine tenders at Price Bros. succeeded in running their machines for eight hours without a break. This ought to bring a remark from Donnacona. Brother McKee thinks he has the record-breaking machines and crews.

The sulphate mill of the New Brunswick Sulphate Fibre Co., at Millerton, is closed and several employees have moved away. There has been a slump in sulphate pulp, but things are looking brighter now.

The wood room at Kenogami handled 1,000 cords of wood during the last week in June. A considerable amount was from short 10-ft. lengths of green wood, very difficult to bark. There is now more wood at the grinder room than when they shut down for the winter, and more wood in the yard than ever known before at this time of the year, all due to good operations in the spring.

Water conditions are the lowest in many years, and unfortunately a dry season is looked for. The flow dropped to 600-ft. on June 16th.

Paper production for June was four to five tons more than it was in June, 1918, and the proportion of sulphite slightly lower.

The Jonquiere paper machine is producing something like 40 tons per day.

The Campbell Lumber Co., Ltd., manufacturers of groundwood pulp, contemplate enlarging their plant at Weymouth, N.S.

The new agreement of the International Paper Co. with the unions will add about \$1,000,000 annually to the pay roll. The contract is effective for one year from May 11, 1919.

## Mills Lost Time.

Heavily increased loss of time, as the result of industrial disputes, was registered during June. There were in existence at some time or other during the month 80 strikes involving 89,917 work people and resulting in a loss of about 1,445, 021 working days, as compared with 84 strikes, 77,688 work people and 893 816 working days in May, 1919; and 32 strikes, 11,888 work people and 46,941 working days in June, 1918.

## VANCOUVER ITEMS.

### Beaver Cove Lumber and Pulp Company.

Owing to the strike in different sections of the country and delay in getting machinery, this company will not be able to start operations before the latter part of August. The final delay being caused by the strike in Vancouver which held up a shipment of about 400 tons of machinery which went up to the plant last week on a special scow. A large evaporator was also held up on one of the ships in town owing to the strike. From now on every effort will be made to finish the plant so that operations may begin at the earliest possible moment.

### Vancouver Strike.

The strike in Vancouver lasted exactly one month and without doubt it was a good thing for all the manufacturing plants on the coast that it ended when it did as supplies were getting pretty low. Although most of the companies had laid in a supply of food to last for some time there were other supplies needed, and the steamers were carrying nothing in the way of freight but food. As it is, the plants are getting their supplies at the present time, and from now on matters will progress along the right channels.

From the point of view of results there is no doubt that the strike here brought most decided results, but not to the laboring man. On the other hand the "Red" or radical element have received a set-back that will take them a long time to overcome. The Internationals of most of the Unions did not countenance the strike and the result has been that the O. B. U. idea will not progress for a long time to come if it ever does with the right thinking members of the unions. This statement applies to all unions. At the present time there is a decided break with the chances that most of the unions will eliminate the radicals and the more conservative members will use every endeavor to carry on their different unions in the best interests of their members.

It is well to note that what is known as the great third party and, by the way, this party has been taken into consideration to a very small extent by the radical element, has taken a hand in the proceedings in the Executive of the Citizens' League and as a result there was no tie-up in any of the public utilities. From the inception of the strike the Mayor had the assurance that the Citizens' League was right behind him in every move to carry on public utilities, preserve law and order and see that the people did not want for the essentials. As soon as the street car men struck the streets of Vancouver thronged with jitneys and although the fare figured out 8c a day extra in the city limits, at the same time it meant transportation to and from work for everyone. The threat was then made that if the jitneys were not taken off, the telephones would stop, but the Mayor and City Council would not agree to take the jitneys off. The telephone operators struck, but plans had already been made and although the electrical workers were out so that any telephone which went out of commission could not be used, at the same time ser-

of the business section did not notice the new service except that at the beginning it was 1000 slower than usual.

From the beginning, the strike committee which was under the leadership of the "Red" element found that they were not against something they did not figure on, and that was the Citizens' League, organized for the purpose of carrying on public utilities at all costs. The strike is what Vancouver and British Columbia had been expecting for some time, and every business man in the city is glad that it has come and gone, and everybody is now looking forward to larger business than ever for this Province and every firm is going ahead with the idea that there will be no more serious strikes for some time to come.

#### Rainy River Pulp and Paper Company.

Without going into details as regards the court proceedings in connection with the above named plant, it may be stated that without doubt, in fact it is a practical certainty, the re-organization along the lines of proper management will take place in connection with this plant, and that as soon as matters are settled it will again be a going concern.

The debenture holders have been given leave by Mr. Justice Murphy to offer the plant for sale, the creditors to be given the chance to take over or buy up the plant if they wish. Mr. Ernest Walker, the receiver, values the plant in his affidavit at \$250,000.00 under present conditions.

#### PROSPERITY AHEAD FOR PAPER MILLS.

Predicting that a free market for newsprint will prevail in the United States by October next, Hayden, Stone and Co. of Boston, refer to the general situation as affecting the market for this product, particularly with reference to the operation of the International Paper Co. In view of the fact that Canadian mills are interested to a very large extent in the American market, the remarks of this brokerage house merit attention. They say:

"For several years the price of newsprint has been fixed by the Federal Trade Commission. While this policy of Government price regulation has really satisfied no one, either the newspapers or the newsprint producers, it has had one very important result. The various investigations and studies of cost of production which the Federal Trade Commission has made have tended to establish the claims of the mills for higher prices for their product. For years the cost of newsprint has been a constant bone of contention between the producer and the buyer and as the chief producer, International Paper has been subject to a great variety of attack and abuse.

But the Federal Trade Commission which has certainly had no bias in favor of the manufacturer has from time to time permitted increases in the selling price of newsprint. In all it has assented to increases which by successive steps have advanced the price from 3.10 cents per pound to 3.75 $\frac{1}{4}$  cents, which is the present level.

As a matter of fact, the so-called "outside market" for newsprint is even now above 3.75 $\frac{1}{4}$  cents per pound. It is believed that in October, if a free market prevails, the price of newsprint will advance considerably, based on the purely natural operation of the laws of supply and demand.

Some trade authorities would not be surprised at a 4-cent price level. Whatever the new price level proves to be

it will affect net earnings of International Paper in the last quarter of 1919 and will almost assuredly be the basis for the renewal of 1920 contracts, most of which come up for revision in December or January.

While a price of 4 cents for newsprint sounds altitudinous, compared with the pre-war levels of 2 $\frac{1}{4}$  and 2 $\frac{1}{2}$  cents, it is worth noting that the newspapers of practically every city in the country are now charging two cents and in many cases more. Higher cost paper and labor have put the 1-cent paper almost out of business.

But perhaps one of the most interesting situations is the fact that the papers of the larger cities are today extremely prosperous. For several months their advertising has been running at record figures. One explanation of this is the income and excess profits taxes. Many corporations - manufacturers, distributors, wholesalers - figure that advertising costs them only 30 or 40 per cent of what they actually pay the papers. In other words, if they did not spend this money in advertising they would be obliged to pay 60 or 70 per cent of it to the Government for taxes. The tax law, is therefore, an ally of newspaper advertising and indirectly of International Paper by making the burden of high cost newsprint less grievous to bear.

Very little has been made of the fact that International Paper's \$20,000,000 common stock has been consistently strong for six months. It has at times actually gone against the market. In February it sold as high as 48 $\frac{3}{4}$  and its recent advance has attracted very little attention.

The strength in Paper common measures in a broad way the excellent results of the three years to December 31, 1918, and the probability of another good year in 1919. It also measures the possibility of initial common dividends in 1920. While only a possibility, there has been consistent buying of Paper common for months by interests who were willing to bide their time.

In four years the company has rejuvenated itself financially. It has reduced bonded debt from \$115,252,000 to \$7,189,000, a cut of \$8,063,000. It has swelled working capital from \$8,935,605 to \$16,249,795, a gain of \$7,314,190, or 81 per cent. It has also cleaned up 34 per cent of arrears in preferred dividends, with the issuance of but \$2,317,976 additional preferred stock.

#### FILTER PAPER MADE IN MASSACHUSETTS

For many years an excellent quality of filter paper for qualitative chemical analysis has been made in this country, but that known as quantitative paper, for exact analytical work, was imported chiefly from Germany and Sweden, until the war began. Then English manufacturers and subsequently those of France and Japan developed quantitative paper and supplied the American market. Of late a paper of unusual merit and evenness of grade for exact chemical work has been produced in the industrial research laboratory of Arthur D. Little, Inc., of Cambridge, Mass., who are about to make both the pulp and the paper in their establishment. It is washed, as is customary, with hydrochloric and hydrofluoric acids, and to assure the extreme measure of purity and absence of ash, it is manufactured with distilled water for which a large still has been erected. It will soon be put on the market.

An idle rumor always gains currency, which is more than can be said of an idle man.



# The Markets

## NEW YORK MARKETS.

New York, July 19.—Demand for practically all grades of paper continues brisk, and the market this week has been equally as firm as previously, while activity has been of broad proportions. Consumers are placing orders with freedom and jobbers and manufacturers are kept busily engaged in caring for all of their customers. Prices on every kind of paper are firm and the tendency is still strongly upward. Indications are that the top levels are yet to be reached, and manufacturers contend that with production costs constantly increasing, they must necessarily advance prices on their product.

Exporters report a steadily broadening demand for American paper from foreign markets. According to authorities in the trade, both Japan and Australia are again displaying interest in our paper market. Australian importers were somewhat overbought at the time of the armistice and for several months no new orders were placed. This condition has cleared up during the past two months, however, and frequent inquiries are now coming from the Commonwealth. The South American countries, with the exception of Chile, are placing numerous orders in this market, and exporters are reported to be doing the best business they have done in years with Cuba, especially in the cheaper grades of wrapping papers. Chile is not buying here to any extent because of the fact that there is not yet any broad demand for her nitrates. The trade with Argentina and Brazil has improved consistently and some orders have been placed by Mexican firms.

Mills with few exceptions are turning out their full capacity and are shipping their product about as soon as it becomes available. Newsprint is moving steadily into consuming channels at firm prices. Some manufacturers are sold up for the balance of the year and are therefore not in a position to consider further business. Those mills having newsprint to sell for spot delivery are securing almost any price within reason, so great is the demand from transient buyers. News in rolls to the transient trade is freely fetching

4.25 cents a pound, while sheets are selling at 5 cents and side runs at 4 cents.

Wrapping and other coarse papers are in much better demand than in a long time. Consumers are increasing the volume of their orders and jobbers are buying not only to cover commitments to customers but also for stock. Prices are hardening and purchasers are being compelled to pay top market figures to get supplies. Tissues are firmly quoted and are in good demand. Fine papers are steadily increasing in activity and mills are constantly advancing prices on the various grades of bonds, liners and ledgers. Merchants are buying writing papers freely, and indications are that a good portion of the supply being absorbed from manufacturers is being placed in stock, which can be taken as a reflection of the belief among jobbers that prices are going higher.

Book papers are in a very strong position. The majority of mills are out of the market as sellers, being sold ahead for so long a time that they are unwilling to enter into further engagements. Prices on book papers are firm and tendency decidedly upward. Machine finished book is quoted at about 8 cents a pound and spot lots are difficult to secure. Coated book is quoted at 9.50 to 10 cents.

The board market is on the mend. Boxmakers are purchasing in greater volume and the average mill is booking more business than at any time this year. Prices are looking up and advances have been scored in some instances. Plain chip board, which a short while ago was quoted at \$37.50 to \$40 per ton, is now held at \$45, while news is priced at \$50 to \$55, a rise of about \$5 per ton.

**Ground Wood.**—The market for mechanical pulp rules firm and trade activity is on the increase. Grinders are disposing of the bulk of their current output almost as quickly as it is available for shipment, and buyers are experiencing a great deal more trouble in placing orders than in many months. Prices are strengthening, and \$30 per ton at the producing point is a quotation frequently named now, although most of the sales being made are at between \$28 and \$29.

**Chemical Pulp.**—Demand for chemical woodpulp is

## Scandinavian American Trading Co.

50 E. 42nd STREET      TELEPHONES <sup>2074</sup> <sub>2075</sub> MURRAY HILL, NEW YORK

We buy all kinds  
of Canadian

# WOOD PULP

At Top Prices.  
Write us and be  
convinced.

activity expanding and the market is in a more active position than since the signing of the armistice. Consumers are placing orders with regularity, and the movement of pulp is closely approaching normal, with indications pointing to a further growth in business. Prices are firming and some manufacturers are advancing their quotations. Newsprint sulphite of domestic origin is selling freely at \$65 to \$70 a ton, while domestic easy bleaching is firmly held at \$85 to \$95 and domestic bleached sulphite at \$105 to \$115 a ton. Domestic soda pulp is freely sought and spot lots are strongly priced at around \$90 at the pulp mill.

Activity in foreign pulp also is increasing. Paper mills here are buying in larger volume and arrivals are beginning to reflect the increased volume of orders placed with Scandinavian producers during the past month. Prices range about a basis of 7.25 cents for bleached sulphite, \$90 for unbleached sulphite and \$80 for kraft.

**Rags.**—After running steadily upward in price for a month or longer, the uptrend in roofing rags came suddenly to a halt this week, when a good many felt manufacturers dropped out of the market as buyers. Prices have adopted an exactly opposite trend, and during the course of the week have declined from \$5 to \$6 per ton, owing to the lighter demand from consumers. Where No. 1 roofing stock sold last week at 3.25 cents per pound at the point of shipment, 3 cents has been about the best price obtainable this week, and some mills have refused to pay even this much. Other grades have ruled notably steady though demand for them has also sagged to an extent. Whites and blues are not as easily salable as they have been, but dealers and packers have held these grades with greater firmness than they have roofing material with the result values have been nominally maintained. Repacked thirds and blues are quoted at 4.50 to 5 cents a pound f.o.b. New York, depending on the packing, while white rags are held at a basis of about 7 cents for No. 1 repacked whites New York.

**Paper Stock.**—Business of a steady character has passed in old paper this week, and no important changes in prices have occurred. Demand has been fair but not of sufficiently broad volume to affect quotations. The tendency of values has been upward, however, and any alterations that have developed have been in a forward direction. Books and magazines have sold at 1.90 to 2 cents a pound f.o.b., New York, and have been readily salable to Eastern mills. Shavings are quoted at ranges of 3.50 to 3.75 cents per pound New York for No. 1 soft whites and from 4.25 to 4.50 cents for No. 1 hard white shavings. Folded news is moving in a consistent manner at 65 to 70 cents per hundred pounds f.o.b. New York, and No. 1 mixed papers are selling at 55 to 60 cents. Kraft and manila papers are in moderate demand and are moving at firm quotations.

**Bagging and Rope.** — An even tenor has characterized the tone of the market for scrap burlap bagging this week, and business of fair magnitude has been done at a price basis of around 2.75 cents a pound for No. 1 scrap. Old rope is firm and moving steadily, with dealers reporting sales at 5.75 to 6.00 cents a pound f.o.b. New York, with most of the business done at the lower figure.

**HOW TO FIGURE FREIGHT ON PULP.**

The following letter to the editor shows how essential is common, every-day arithmetic in the pulp and paper industry. This may be an isolated and exceptional case, but there may be others:

Dear Sir:—Will you kindly advise the standard method employed in arriving at the proportion of freight chargeable to the shippers in the case of a sale of pulp made at a price f.o.b. pulp mill on a basis of 80% dry, when the pulp contains a greater percentage of moisture?

Take for example: A carload shipment contains 80,000 lbs. wet pulp, 50% dry, or 40,000 lbs. air dry weight.

Some consignees work out the problem this way: Dry weight 40,000 lbs. On the basis of 80% dry, the wet weight would have been 50,000 lbs.; the wet weight shipped was 80,000 lbs.—difference chargeable to shipper 30,000 lbs., at whatever the rate of freight may be.

Others, modestly (and we think rightly) claim the difference in percentage between 50 and 80, or 30%, making the proportion of freight payable by the shipper only 24,000 lbs.

To see who is right, the simplest way is to take our correspondent's own figures. To get the 24,000 lbs. he would charge to the shipper he has taken the difference between the percentage of air dry pulp contained in the shipment, 50%, and the percentage that should have been there, 80% and gets 30%, the difference in air dry content. He then takes the wet weight of the shipment as his basis and multiplies by 30%, which gives 24,000 lbs., or the excess water, the freight on which is to be borne by the shipper. If this figure is correct, the remainder of the shipment (80,000—24,000 lbs.) should be 80% air dry. But if we multiply 56,000 by 80% we get 44,800 lbs. and shipper says he delivered only 40,000 lbs., air dry. Obviously the shipper is wrong, but is the consignee right?

If the car contained 80,000 lbs. of pulp, of which 50% was air dry fibre, the air dry weight was of course 40,000 lbs. The agreement called for a shipment containing 80% air dry pulp and 20% water. To find the weight of such a shipment we divide the air dry weight by the percentage it is supposed to contain, in this case 80% (or .80) and get 50,000 lbs. This is the weight on which freight should be paid by consignee because 80% of 50,000 is 40,000 lbs., the weight of air dry pulp he really got. The difference between 50,000 and 80,000 is the basis of freight charged to shipper. We must use actual weights.

**BROWN HEADS CONDENSER CONCERN.**

At a meeting of the Board of Directors of the Wheeler Condenser and Engineering Co., Carteret, N.J., on July 8th, Mr. J. J. Brown, formerly Vice-President and General Manager was elected President, succeeding Charles W. Wheeler, recently deceased. Mr. H. S. Brown, of 50 Congress St., Boston, was elected Vice-President. He has been associated with the Power Specialty Co., 111 Broadway, New York City, for the past 15 years. Among other products of this well known company are: natural forced draft cooling towers; centrifugal pumps; vacuum pumps—patented steam jet, turbo, dry rotative, and Wheeler-Edwards; jet condensers; heaters; exhaust relief valves; vacuum pans; and single multiple effect evaporators.

At this writing, in the condenser department, 16 condensers of approximately 50,000 sq. ft. cooling surface are being made.

All aboard for Chicoutimi, Kenogami and Ha! Ha! Bay. Reservations possible by wire.



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Quotations Solicited.

### ELIS OLSSON WITH PULP AND PAPER MILL ACCESSORIES.

The pulp and paper manufacturers in Canada and the United States are fairly well acquainted with Elis Olsson as a technical man in connection with the manufacture of sulphate pulp. He has been on this side of the Atlantic since 1906 and most of the time has been connected with the Brompton Pulp & Paper Co., at East Angus, Que., coming over here from Sweden after considerable mill experience on the other side. In speaking of J. A. Bothwell, of the Brompton Co., under whose progressive management Mr. Olsson worked for thirteen years, Mr. Olsson referred to



Elis Olsson.

him as a man who wants to do things and generally does and that when he believes in a man he backs him up to the limit. This policy has spelled success for him and his concern.

Mr. Olsson says that the sulphate mill was more or less a favorite with Mr. Bothwell, and needed all the nursing it could get. As a result of the attention it received this part of the concern has grown strong, but will never be made really beautiful. Mr. Olsson left the Brompton concern last year to take a position with the Chesapeake Corporation in Virginia, which operates a sulphate mill and board mill, and has great prospects of becoming a first class plant.

Believing that it would be a good thing for an experienced mill man to go into the machinery end and help look out for the mill men from the outside of the business Mr. Olsson, while retaining connection with the Chesapeake Corp., is now the prime mover of the Pulp and Paper Mill Accessories, Ltd., Shaughnessy Bldg., Montreal. With Mr. Olsson is Mr. G. Hallberg, who has had considerable experience in sulphate manufacture, as well as others experienced in the manufacture of the products for which the new concern will sell equipment. It is with the belief that they are equipped to sell service as well as material that this company was organized.

Mr. Olsson says they have some mighty good things to sell, among which is the P. A. P. A. screen system, which was designed in the United States by Spangenberg for American and Canadian mills. The designer moved back to the Old Country and has built a considerable number of them there, where the screen has proved a great success. Mr. Olsson had previously been consulted in the building of some of the best screen mills on this side and they have proved to

be successful in operation and good money makers. This line of work is also being followed by the new concern and in their consulting work are closely affiliated with Europe's best engineers in the chemical pulp line, and they also have some very good connections on this side.

The editor had a very interesting visit with Mr. Olsson and found him very enthusiastic over the prospects of his screening system and the future of his new concern.

### WELFARE WORK.

The dislike which many employers feel for "Welfare Work" has resulted from a thoughtless or careless application of the idea, as well as from the misuse of the term. Welfare work is really nothing more than the attempt of a corporation to renew, by means of a special department, the friendly personal interest which formerly existed between master and servants. It may seem impossible that a special department can carry out this idea, but experience has proved that it can. The thought that welfare work should be left to each department in the plant has proved impracticable, because each department is but a unit of a larger organization, and the demand upon each unit for co-ordination of efforts and for production has changed the relation between superintendents or foremen and workmen into that of simply fellow-workmen, with no opportunity for the pleasant, close personal relations of employer and employee which existed in the smaller organizations of fifty or seventy-five years ago. This has been intensified by the size of the organizations, the size of cities, and the distances involved. The only solution then is the Welfare Department (call it by whatever name you choose—some like Employees' Service Department) under the guidance of a man or woman of experience, broad understanding and human sympathy, empowered to truly represent the employer and not restricted by departmental jealousy and individual likes and dislikes.

Think it over! The leading industrial organizations of the world have organized such departments and many Governmental bodies have definitely approved them.

### BUDWORM KILLING N. B. FIR TREES.

Fredericton, N.B., July 15.—"There is hardly a green young fir standing in the big woods of New Brunswick, that has not been killed by the worm which infested this province four years ago," said Charles Cremin, one of New Brunswick's best known guides, this morning. "And the food situation for moose and other big game of the country is most critical."

Mr. Cremin said that not only had the young fir trees been almost completely decimated, but lumbermen had also reported many spruce were being killed, too. At Long Lake on the Tobique River many spruce trees had been almost completely destroyed, and both large and small trees were being rotted so as to be rendered almost unfit for profitable manufacture after being cut. The insect which has caused the scourge is a small white miller which lays eggs in the soft buds in the spring. From these eggs a web is formed over the tender part of the bough, killing its growth.

The small fir trees which form the principal food for moose on the ridges have proven the easiest prey for the pest. It is difficult to combat the trouble.

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### CHINA THINKS CANADA PART OF U.S.

Vancouver. "Canadian firms who want to sell goods in China, must give China what she wants, not what we want to give her," said Charles S. Meek of Charles S. Meek & Company, Ltd., Vancouver, on his return from a three months' tour of the Orient, made especially to size up trade possibilities. Mr. Meek says he was never more impressed in his life than when he saw the big possibilities the East offers for trade, and so close to Vancouver.

Mr. Meek deplored the fact that so many Canadian firms are endeavoring to break into Chinese markets through United States agents. "The people of the great centres across the Pacific do not know there is a Canada, or if they do, they attach about as much importance to it as we do to the area within the Arctic circle," said Mr. Meek. "Canada is part of the United States when you come to talk to the man in the street, and the reason is that for every trade advocate Canada has in the Orient there are thousands of men whose business houses are located in the United States. Now is the time for the Canadian to sell his goods in China. China is a logical market and now is the time for Canada to mould her Pacific trade."

Mr. Meek expressed regret that the Canadian Trade Commissioner is located in a little office in an out-of-the-way place. This is especially regrettable, he said, because the British Commercial attache and his staff has done much to establish a bond of confidence between the British and Chinese in all commercial dealings and is anxious to foster trade within the Empire. Canada could benefit greatly by the pioneering of the British authorities, in Mr. Meek's opinion. He states that he was one of the first Canadian general export

men to visit many centres, and that merchants when they knew why he was there came in numbers to talk with him about handling Canadian goods.

Mr. Meek also visited Japan, Korea and the Philippines, and was a short time at Vladivostok. He looks for no important trade developments with Japan and Canada, but says Japan is buying great quantities of machinery in various markets, and will in a short time endeavor to flood China and other markets with her goods.

### LOOKING FOR MACHINERY CONNECTIONS.

Edouard Hery, 16 Rue du Rocher, Paris, who represents manufacturers of paper and pulp mill machinery is sending Mr. Mary to look up new connections on this side. He is expected next week and firms seeking representation in France may communicate with him through the Pulp and Paper Magazine. There seems to be an especially good field for pulp mill equipment and for the manufacture and conversion of paper and board.

### VULCAN IRON WORKS, VANCOUVER, B.C., MANUFACTURING PULP AND PAPER MACHINERY.

The Vulcan Iron Works, Industrial Island, Vancouver, B.C., are western agents and manufacturers of the Swenson Evaporator and their pulp mill equipment. They are also manufacturing a digester of which we shall be publishing more detailed information later on.

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**MOBILIZING CANADIAN FORESTS.**

An interesting and instructive address on "Mobilizing the Forests of the Dominion" was delivered in the Physics Building of Toronto University, by Robson Black, of Ottawa, secretary of the Canadian Forestry Association, and a former well known Toronto newspaper man. He spoke on April 26 before the Canadian Institute. Mr. Black stated that Canada would very shortly become the greatest storehouse of timber in the world and that to protect these forest resources was one of the first duties of the Dominion. As to the possibility of timber exhaustion he added that, until there was an adequate forest survey of Ontario and Quebec, all speculations were merely surmises. The rate of consumption was, however, terrific. Forty million copies of newspapers issued every day in America were stripping millions of acres of spruce and the dailies published in Toronto alone would devour in one day, at least, one thousand spruce logs.

Touching upon the agitation which has been raised in certain quarters in the United States that the embargo on the shipment of pulpwood from Crown lands of Quebec should be removed, Mr. Black stated that Americans now fully realized the fact that Ontario, Quebec and New Brunswick would within a few years almost monopolize the newsprint business of Eastern America. That fact readily translates itself into a chain of new towns added population, new traffic for the railways and new wealth for the merchants and farmers. Whether this policy of industrial domination ever comes true depends entirely upon the immediate application of a policy of forest investigation and technical supervision of timber cutting. There could be no future for the timber industry of Can-

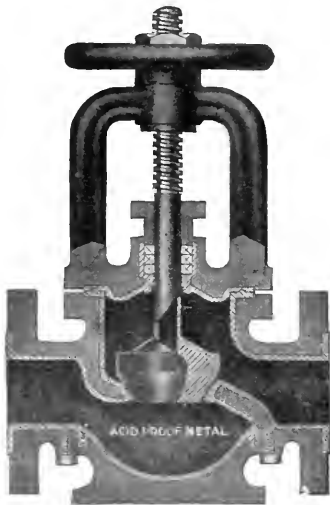
ada, no increase of export trade and not even a certainty of existence for hundreds of towns if the present depreciation of the forest resources was not arrested. Little was to be gained by talking of the extensive planting of trees until the ravages of fire in mature timber has been mastered.

**TEACHING ENGLISH TO FOREIGNERS.**

Two books on this subject have recently come from the pen of Henry H. Goldberger, instructor in Methods of Teaching English to Foreigners, Columbia University, and Director, Americanization Institute, New York City. The author considers that the first step in the Americanization of the immigrant is learning to speak, read, and write English. The titles of the books are: "How to Teach English to Foreigners," which may be secured from A. G. Seiler, 1224 Amsterdam Ave., New York City, price 75 cents; and "English for Coming Citizens," for sale by Charles Scribner's Sons, 597 Fifth Ave., New York City, price 80 cents.

**BRAZIL AS A MARKET FOR SWEDISH PAPER.**

The paper trade of Brazil has, during the war, passed very largely into the hands of American producers. The total imports of paper into Brazil before the war amounted to a value of £1,500,000, of which the Americans had only £100,000 and Germany £500,000. The American share has since increased fourfold, and elaborate preparations are being made for still further increasing this amount. With a resumption of normal transport facilities, there would seem to be an opportunity for Swedish manufacturers successfully to enter this market.—Anglo-Swedish Trade Journal.

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OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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No. 31

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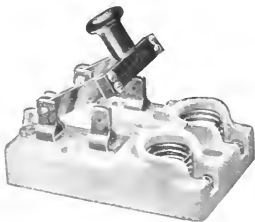
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## EDITORIAL

### WE ARE HAPPY.

That is the beginning of a very popular college yell at M.I.T., but at present has another significance. So as not to keep our readers longer in suspense it gives the editor the greatest pleasure he has yet found expression for, to announce that Joseph Harvey Stephenson arrived last Saturday, July 26. Of course, the baby is perfect, and all is well at Ste. Amnes.

### OUR NEIGHBOR'S TROUBLES ARE OURS.

A number of things are happening in the United States that will almost certainly have a very considerable effect on Canadian business and politics. It is unfortunate that these two words must be used so often in conjunction, but alas, it is so. As regards politics, there are three phases to the matter: the debate in the Senate over the Peace treaty, the repeal of the Reciprocity Act and general legislation affecting business.

Whatever is done about the Peace treaty can hardly have even a remote effect on the relations between Canada and the States, but the second is almost a family matter. Some people will probably view the repeal of the Reciprocity Act as a writ of divorce, or at least a breaking of the engagement, but Canada never accepted the proposal. We may therefore expect business to go on between the two countries in the same happy and harmonious manner as in the past.

American business, however, is very intimately connected with Canadian business. The connection works both ways as the exports from each to the other are bigger than to any other one country. In addition to selling a lot of material in the United States, a considerable amount of Canadian goods are exported to other countries than America from American ports, to which they must naturally be carried over American railroads and be handled by American labor. Any transportation trouble, such as seaboard strikes and consequent freight embargoes is a serious matter for some Canadian producers. It affects, to some extent, our ability to reach American consumers as well as customers in other countries.

General business conditions affect Canada in two ways. Any disturbance means less buying. When the disturbance is labor trouble it also means less making, and consequent difficulty for Canadians to get many of the materials needed here and most naturally and easily obtained from our neighbor. Difficulty in getting coal, steel, textiles, machinery, etc., from the United States would be a misfortune, to say the least.

There have been many signs of a fine recovery from the serious operation that business recently underwent, but there are now indications that serious complications

may endanger the health of the patient. Some thoughtful comment in regard to putting arsenic in the tea is quoted below from an editorial in "Paper." Our friend has long been a close observer of both political and business conditions, and his views will be of interest to Canadians. Labor troubles across the line can do Canadians no good, even if it means a bigger demand for the products of the industries affected, while it will do Canadians a great deal of harm if production is at all interfered with by people who use horse strength and take the bit in their teeth rather than horse-sense and guide themselves wisely and carefully.

There is another aspect of the condition referred to in our contemporary's comment. Difficulty in getting supplies of machinery and other things will add to the disadvantage of unfavourable exchange which our trade with Uncle Sam already suffers. It is likely that this would increase the perfectly natural tendency for Canadians to reciprocate with England's policy of imperial preference by buying more goods on the other side. This would have several good effects. It would help liquidate Canada's credits in England and would encourage British shipping to come to Canadian ports and thus give much needed relief in permitting a greater movement of Canadian products to England, where a hungry market awaits.

After reviewing some indications of approaching prosperity, the editorial from "Paper" says:

This is the roseate view of the industrial picture; and I am inclined to believe it is not overdrawn. There is no good reason why business should not flourish; but there are many possible interferences which are not based on reason. It is so easy to spoil a good thing. A bit of a puncture may abruptly end a promising joy-ride, and there is always somebody ready to litter the highway with nails and broken glass.

The two grave dangers we have to fear at this time lurk in political and labor controversies. The two great political parties are apparently unable to forget that we are approaching a general election. As has always been the case, instead of joining in a sincere effort to quiet public apprehension by promptly enacting such enabling legislation as may be necessary, and then going home, the politicians on both sides are endeavoring to frame up issues and each seeks to gain advantage by putting the other in a hole. In this attempt it is barely possible one, or both parties, may dig a hole big enough to accommodate the entire country.

The gravest situation, however, is that which is created by differences arising between labor and capital, all of which are without legitimate excuse. I have never known a fight between these interests that could not have been avoided but for the unreasonableness of one or both parties.

Just as our factories are beginning to run full time, strikes and lockouts are increasing their interference.

Right now when our ports are crowded with freight, badly needed across the seas, shipping is paralyzed and these tides of trade are back up to the very sources of raw materials. Railroads are obliged to embargo traffic to the seaboard, which in turn blocks activity at originating points. How long it will last or how it will end no one can do more than guess.

While I am writing this the announcement comes that a vote has been ordered to determine whether 150,000 steel workers in the United States shall go on a strike, and it is predicted they will decide in the affirmative. If it happens, it will be no ordinary struggle; for the steel producers are very determined and are also well prepared for a long fight.

Shut down the steel mills and construction of every kind is halted; every allied industry is affected, and sooner or later everybody will feel it.

I do not pretend to know whose fault it is that this trouble is brewing. I do know that somebody is at fault, for there is no occasion whatever for precipitating an era of bad feeling and economic waste. To engage in a general fight at this time means that, instead of reaping the abundant harvest which is now ripe, we shall destroy it, and shall all have to share in paying the price of this human folly.

#### COBWEBS.

The Laurentide Company is more than a manufacturing concern. From the last copy of *Le Digesteur* it is seen that they are encouraging the proper care of babies and the admission of fresh air to houses by printing descriptive pictures. They also conduct a class for the little housewives. More than 40 are enrolled.

It would appear that the use of sulphur in the Canada Paper Company's pulp mill has been making quite a smell and the neighbors are raising a great fuss over it. They shouldn't mind; just imagine it is last year's ensilage that spoiled. Imagination may be responsible for the objections.

From the signs on Montreal saloons, one might expect to get anything but drunk. Yet there are signs on the streets such as notice of an occasional inebriate with a brick in his hat, that "hard stuff" is obtainable somewhere.

#### HOT WEATHER POEM.

It's hot in Grand Rapids, Wis., so the editor of the Consolidated News may be forgiven for the following poem:

The neighbors left for sylvan dells;  
Their phone-bell rings, their tom-cat yells.

They summer cool beside the springs;  
Their phone-cat howls, their tom-bell rings.

Their ears are lulled by forest tales;  
Their tom-phone peals, their cat-bell wails.

The only American newspapers owning their own paper mills are the Chicago Tribune, the Boston Globe, the New York World, the New York Times, the St. Paul Pioneer Press and Dispatch, and the Minneapolis Tribune.

#### BIG COMBINE OF BRITISH NEWSPRINT MILLS POSSIBLE.

According to the Financial Times, information comes from London of a prospective development in the paper-making industry of Great Britain which has unusual interest for Canadian pulp and paper men who are just at present exerting every effort to get into the British market.

Reports from what is regarded as a reliable source assert that interests are now at work in London to effect a combination of all the newsprint producing mills in Great Britain under an incorporation somewhat similar to that which was employed when the International Paper Company in the United States, embracing some forty different mills, was formed.

The plan as outlined is to buy up all the existing mills, scrap such as are obsolete, add new machinery to those requiring it and build one large additional mill, adding, altogether, some twenty new machines to the number already in existence. This it is estimated would be sufficient to take care of practically all of Great Britain's present requirements of newsprint, including the 150,000 tons now annually imported. The plan, furthermore, embraces taking into the organization two or three Canadian pulp companies with a view to their supplying the bulk of the groundwood necessary for the combined mills' operations.

The Becker interests are said to be behind the consolidation scheme which is reported to have progressed to the point of having the financial arrangements fully worked out, with options secured on some of the mills.

The Becker company already has large Canadian holdings of pulpwood limits and is interested in several pulp mills here. Mr. Fred Becker, the head of the concern, it will be recalled, spent several weeks in Canada recently, during which he gave voice to some pretty vigorous views as to Canada's place in the British paper market. His idea was that there was lots of room over there for all the groundwood pulp we could produce, but hardly any at all for our newsprint paper.

If the Becker interests are behind the consolidation scheme, as alleged, the theories advanced by Mr. Becker during his Canadian visit, would fit into it with absolute nicety.

So far, it is said that the Northcliffe mills in Newfoundland are not included in the plan. In any event their output is absorbed by the Northcliffe publications and offer no competition in the general paper market.

Paper-making in England has enjoyed quite a boom since the close of the war, despite a report printed in Montreal this week to the effect that the mills over there are in a bad way and will require two or three years to reach their normal production of pre-war days. Advice received at the headquarters of the Canadian Pulp and Paper Association here a day or two ago are to the effect that the British mills have all adopted the three-four system and are working twenty-four hours a day with three shifts of men. Under such circumstances, it is said, normal requirements will soon be caught up with.

Apropos of this article the Pulp and Paper Magazine has been informed that Becker & Co. have acquired the pulp mills of the Campbell Lumber Co., of Weymouth, N.S., and the Clyde River Pulp & Paper Co., Clyde River, N.S. It is understood that the former will be called the Sissiboo Falls Pulp Co., and the latter the Clyde Pulp Co.

# The Development of a Mill Laboratory\*

By O. B. BRYANT, Bennett, Ltd., Chambly Canton, Que.

Chemistry has played such an important part during the war and has come so rapidly to the front that to most people it is no longer the mystery it was five years ago. In the past many manufacturers employed chemists because they gained prestige thereby and also because they could derive considerable advertising value from a laboratory and chemical staff. A glance through the advertising pages of even the latest magazines with their weird retorts and flashes, the like of which no chemist has ever seen or hopes to see, will at once indicate the advertising value which many manufacturers place upon their chemical laboratories. Formerly, for the most part, the chemist was considered as a luxury and so little dependence was placed upon him and so little opportunity was given him that it is a wonder he was able to accomplish anything of value to the plant in which he was employed. In justice it must be admitted that in some cases manufacturers realized the value of their chemists and gave them all the possible help and encouragement, but this was the exception rather than the rule. The war with its almost incredible developments along chemical as well as other lines brought about a marked change in the status of the chemist. Manufacturers found themselves shut off from many of their customary raw materials and new ones had to be discovered; old processes had to be improved and new ones developed; production had to be increased and rising costs held in check. While it would obviously be too much to say that the chemist was responsible for all the remarkable advances that were made, it is certainly true that he was given more latitude than ever before and that his efforts combined with those of managers, engineers and superintendents brought about almost unbelievable results.

With such achievements constantly before them, it is hardly to be wondered at that to-day manufacturers are turning more and more to the chemist to solve their manufacturing problems. In fact, so much is now expected of chemists that they are being employed in many industries in which they can be of no assistance whatever. This, of course, is partly the fault of the chemists who have not studied the problems of the industries before entering their employ, but a large share of the blame can be placed upon the industries themselves. No manufacturing concern would build extensions to its plant or add new equipment without first going thoroughly into the matter to determine whether such extensions or equipment were needed and whether they would be profitable. If the problem were of such a nature that it could not be solved by the management alone expert advice would be secured. Yet many industries with scarcely any serious consideration have decided to establish laboratories and have left the building and equipment of such laboratories to young chemists who have had no experience in any lines of manufacture. With such conditions prevailing it is scarcely to be wondered at that in some industries the chemist is in disrepute.

Before any plant establishes a laboratory a complete investigation should be made to determine whether a laboratory is needed; the nature, size and probable cost of a suitable laboratory and the achievements that may be reasonably expected. Such an investigation carried out with the aid and advice of an experienced chemist will determine with reasonable certainty whether or not a laboratory will be a profitable addition to a plant.

Assuming that the raw materials, manufacturing processes and finished products of a plant lend themselves to chemical control the advisability of establishing a laboratory depends almost wholly upon the size of the plant. A large plant can afford to expend a considerable sum of money in controlling the quality of its product and improving its processes whereas the amount which a small plant can devote to this purpose is sometimes very limited. In the case of small plants it would seem more reasonable for several to pool their interests and establish a joint laboratory rather than attempt to finance individual laboratories. Men of higher capabilities could be employed and better services would be obtained through the joint laboratory than could be hoped for when each plant was endeavoring to maintain its own laboratory. It is safe to say that unless a plant can see its way clear to expend at least \$2,000 in establishing a laboratory and some \$5,000 a year in operating it there is very little use in considering adding a laboratory. This is the minimum amount for which any sort of laboratory can be established and operated and in arriving at these figures it has been assumed that the laboratory will be small and only one chemist will be employed. No hard and fast rule can be made which will determine whether a plant should establish a laboratory nor can any list of equipment and supplies be drawn up which will suit all plants. It is only possible to arrive at a satisfactory decision through studying the conditions of each individual plant. In many cases it would be better either to establish joint laboratories as has been mentioned before or to hand over all chemical problems to some one of the many commercial laboratories while in other cases it would be highly profitable to establish individual laboratories. Before going ahead with any project expert advice should be obtained.

When it has been decided to establish a laboratory many questions arise as to its size, equipment and scope. Here again each plant presents its own individual problems governed by its size and the nature of its raw materials and products. Some plants require only small chemical laboratories with very limited chemical staffs, while in other plants it would be advisable to establish laboratories so extensive that processes can be carried out and products manufactured on a semi-commercial scale. In some plants only routine work such as the control of processes and the standardization of products should be undertaken while in others a great deal of time could reasonably be devoted to research. Each plant presents a highly specialized problem and each must be studied individually in order to arrive at any definite course of action. One thing however is certain; any plant manufacturing pulp or paper should have some source of

\*Read at the summer meeting of the Technical Section, Canadian Pulp and Paper Association, on board Canadian Steamship Lines Steamer "Murray Bay," July 29, 1919.

chemical control whether it be its own chemical laboratory, a joint laboratory or a commercial laboratory.

To build and properly equip a chemical laboratory is a relatively simple problem, but to provide a chemical organization to operate the laboratory is quite another matter. Regardless of whether the chemical staff is to consist of one or twenty men its members should be chosen with extreme care. Probably two-thirds of the failures of chemical laboratories to make themselves indispensable to plants are due to the fact that they have been operated by men whose experience was not sufficiently wide to enable them to cope with the problems presented. A college degree is not sufficient evidence that a man can successfully manage a chemical organization for it requires years of experience to give an individual the ability to direct chemical work. It must also be borne in mind that the type of man selected should depend upon the type of work the laboratory is to undertake. A laboratory handling routine work requires quite a different type of man than one which is almost entirely devoted to research work. When the size of a plant warrants the best plan is to place all routine and standardization work under one department of the laboratory and to carry on research work in another, both departments being under the supervision of one man. The supervisor should be a man of organizing rather than research ability with a thorough chemical knowledge and the ability to adapt the ideas of the laboratory to plant operations. Where the chemical organization is to consist of only one individual it is rather more difficult to secure a man of the proper type. In this case the man chosen should be somewhat of a research man with a great deal of hard common sense; he must be able to create ideas, to try them out on a laboratory scale and finally to adapt them to large scale operation. Such an all-round man is hard to obtain, but he is particularly valuable to a small laboratory which has possibilities of developing into an organization of considerable size as he is generally the type of man required to head a larger organization. From what has been said it is evident that too much care cannot be exercised in choosing the chemical staff of a laboratory and particularly the man who is to head the staff.

As has already been pointed out the work which a laboratory may be expected to do depends upon the nature of the raw materials, processes and finished products and upon the size of the plant. Naturally a large plant can afford to go into the standardization of its raw materials and products and carry on research work along the lines of processes, new materials, etc., to a far greater extent than can a small manufacturing concern. For a small plant which wishes to maintain its own laboratory the best lines of endeavor lie in the standardization of raw materials, processes and products. Few small plants can afford the equipment and staff necessary for carrying on extended research work as such work requires a large amount of chemical laboratory equipment, a laboratory provided with apparatus on a semi-commercial scale and a staff adequate to operate the two types of laboratories. Except in unusual cases the first costs of such a combination of laboratories would be from \$10,000 to \$20,000 or more and would require a like sum to operate.

After a laboratory has been put in operation it is of the utmost importance that a spirit of co-operation and good will be established between the chemical staff and those in charge of manufacturing operations. Contrary to general opinion the friction which often occurs between the superintendents and members of

the chemical staff is almost always the fault of the latter. More often than not the chemist starts to revolutionize the processes of a plant without a thorough study of the existing conditions and because of a lack of knowledge of the peculiar conditions which obtain at the plant in question he is of the opinion that things are being run inefficiently, that the superintendent is either old-fashioned or doesn't know his business and that radical changes should be made at once. He is generally pretty outspoken in his opinions and this is naturally resented by the superintendent and others in charge of manufacturing operations. Finally the chemist starts his campaign to revolutionize the industry and sooner or later is bound to make some move that will get him into trouble. The operating department knows that trouble is ahead but in stead of pointing out his mistake they allow the chemist to go ahead and learn his lesson. He does learn it, and after several such lessons his respect for the superintendent and other members of the operating department is great increased. If the chemist would only take into consideration that while he was employing his time acquiring a highly specialized chemical education the superintendent was obtaining through hard knocks and long hours of work an equally specialized education in plant operation, he might be willing to concede that the superintendent really does know something about the business. The chemist will surely fail in his duty if he does not secure the active co-operation of the superintendent and all others connected with the manufacturing operations for it is only through their aid that he can be of most use to the plant. In his experience in various plants connected with the pulp and paper industry the writer has found the operating organizations to be composed of broad-minded men who realize the value of a chemist to a plant and are only too anxious to co-operate with him. But the average superintendent naturally hates to be dictated to by a man whose only excuse for being around the plant at all is a more or less general chemical knowledge. Until the chemist has acquired enough experience to discuss plant problems intelligently with the operating department he should keep his eyes open and his mouth shut.

Not long ago the chemist of one of the largest pulp and paper plants in Canada announced his intention of changing the title of his department from that of the "Chemical Department" to the "Chemical Service Department." If all the chemists of the industry would come to a realization of the meaning of the word "service" and make it their aim to serve the various departments of their plants the increased value of the chemical laboratory would be enormous.

#### TO MERGE NEWSPAPERS.

St. John, N.B., July 22.—The Maritime Retailer, a trade paper in its fifth year, was purchased outright by W. F. B. Paterson, and S. K. Smith, publishers of the Business Review.

Beginning with the August edition the two papers are to be merged into one, under the name of The Business Review and Maritime Retailer, and continue under the management of Mr. Smith.

#### COSTLY SCRAP OF PAPER.

The peace treaty which was signed at Versailles is on Japan parchment, and is stated to have cost 15,000 francs to prepare.

# Utilization of Waste Sulphite Liquor

By BJARNE JOHNSEN and R. W. HOVEY.

(Continued from last issue.)

## Effluents.

The sulphite mills situated on large rivers or seas usually have the great advantage of being allowed to discharge the waste liquor without any previous purification. In Canada with her large rivers and sparse population the problem of the disposal of waste liquor waters has not, therefore, been so widely discussed.

However, in densely populated countries where legislation prohibits the direct emptying of the waste liquors into the streams the sulphite-pulp industry meets with great difficulties. In some districts, mills are even forced to close down if they are unable to dispose of the liquor in a satisfactory manner. In fact the great development of processes for utilization of the waste sulphite liquor is due more to these circumstances than to efforts on the part of the manufacturers to turn the enormous quantities of valuable material wasted in this process into useful products. The available literature on the question of the pollution of rivers by sulphite liquor and the purification of the liquor shows that there is some difference of opinion regarding the injuriousness of the liquor, caused by fibres, sulphurous acid, and dissolved organic substances.

It has been pointed out that the fibres collect in the river and precipitate impurities from the effluents of other factories and from sewage, forming a mud at the bottom of the river, poisoning the fish, and causing other damage. The fibre losses from the mills are often very large, but the fact that these vary between 1 and 10 per cent of the dry pulp produced shows that it is possible, by the use of effective save-alls, to decrease the losses considerably in some mills. This is especially desirable as it would mean a recovery of very valuable material. The fibres lost do not, as it is generally believed, consist chiefly of the less valuable parenchyma cells but contain a large proportion of good tracheids. The fibres are largely absorbed by the layer of algae and also form a nutriment for organisms. The growth of algae is considerably increased by the organic substances of the waste liquor, particularly the fermentable sugars. The algae usually present in the rivers are of a brownish colour and are attached loosely to the river-bed but are changed into a stronger structure of a greyish colour by the action of the sulphite liquor. In small rivers, and especially where the water flows slowly, the growth of algae caused by the organic matters of the liquor may be so considerable that the whole river-bed is practically covered with a layer of algae, preventing the fish from reaching the nutriment of the soil. Large proportions of the algae die and give rise to the bad odours often noticed. It has been considered of importance to remove as far as possible the free or loosely-combined  $\text{SO}_2$  from the liquor before discharge, and a neutralization of the liquor has been recommended. On the other hand it has been stated that a neutral or slightly alkaline liquor is more harmful as regards growth of algae than is the acid liquor. No doubt the organic substances directly favour the growth of algae and in small rivers or rivers with a slow current this has an injurious effect upon fish life, but it is also stated that a certain fish nutriment is developed through the influence of the organic substances. The former

was the case in Königsberg (Germany) where the liquor had to be taken in tank steamers and discharged in the open sea. The free sulphurous acid present in the liquor requires for its oxidation a certain amount of oxygen, which in rivers that are not sufficiently aerated has to be supplied by the water itself. In small rivers the fish may in this way be deprived of the oxygen required for respiration. Indirectly the sulphur content of the liquor may have an injurious effect upon fish life through the decomposition of sulphates and the subsequent formation of hydrogen sulphide.

For the purification of waste liquor several methods have been proposed. A high dilution with water as obtained in large rivers is no doubt very effective as far as the oxidation of the reducing substances of the liquor is concerned, but the increased growth of algae caused by the organic substances is noticed even in high dilution if the liquor is added continually to the stream. But this algae (*Sphaerotilus*) is very sensitive towards any interruption in the food supply and, recognizing this fact, it has been proposed to discharge the liquor intermittently, e.g., twice in 24 hours. In some cases this has proved to be of benefit. Biological treatment has apparently not been successful because of the antiseptic action of the sulphurous acid. Irrigation does not effect the necessary purification except in cases where the liquor has previously been mixed with sewer effluents from a city. Oxidation of the liquor before discharge into the river has proved inefficient. The purification of the rivers by copper sulphate has also been considered, but it has been pointed out that this treatment will also destroy such algae as are necessary in the river for the production of oxygen and the absorption of organic substances from waste effluents. Copper sulphate is also changed chemically by the action of the carbon dioxide present in the water. The copper carbonate, however, does not act upon the fungus but precipitates in the sludge, and may in this way be injurious to the natural fauna of the river.

Although it appears that no effective purification can be obtained in a simple manner and therefore the expensive evaporation of the liquor in some cases may prove to be the only possible method for its disposal, the modern processes for utilization of waste sulphite liquor, e.g. the production of alcohol, tannin extract, binding material, and fuel may satisfactorily solve the problem of river pollution by waste sulphite liquor.

## Binding Material.

When waste sulphite liquor is concentrated to a thick liquid or to dryness a tar-like product is obtained which consists chiefly of compounds of lignin-sulphonic acid in admixture with sugars, and which is suitable as a binding material for powdered substances. The most important operation in the manufacture of a binder from the waste liquor is, therefore, the evaporation, but it is also often recommended in the numerous patents to purify the liquor before the evaporation by removing certain products which are not desired in the final binding material.

The binding power may be increased or other qualities of the ultimate products may be obtained by the addition of certain substances to the liquor. In some

cases when it is desired to remove part of the calcium from the solution, sulphuric acid or a sulphate is added to the crude liquor, in other cases the liquor is neutralized with lime before evaporation. Instead of preparing the binder for briquetting separately it has also been proposed to mix the liquor with the briquetting material and other substances directly, as in the German Patents 246289 and 252439, according to which sulphuric acid or an acid compound is added to a mixture of sulphite liquor and briquetting material, with or without the addition of aldehydes. The mixture is heated to the point of gelatinization, which can be accelerated by adding such substances as tar, tar-products, asphalt, etc. Afterwards the briquettes are dried below 200 C.

Among the many uses for which the binder from sulphite liquor has been recommended are binding material for briquetting powdered fuel (such as coal, peat, sawdust, etc.), blast furnace dust, and fine pyrites. The binder is also used in foundries for making sand cores and for binding dust on roads.

It has been pointed out as a drawback in the use of concentrated waste sulphite liquor as a binding material for briquetting powdered fuel that it is hygroscopic and soluble in water and, therefore the briquettes are not weather resistant. Many methods for the elimination of this disadvantage have been patented. It has been recommended to heat the briquettes to a high temperature in order to carbonize the binder or to add to the liquor compounds of chromium and finally aluminum sulphate. Pollasek has patented a process whereby the briquettes are immersed in a mixture obtained by heating crude petroleum oil, containing paraffin or ozokerite substances with bitumen and phenols, to the boiling point with strong aeration, until a mixture is obtained which solidifies on cooling. Favourable results have been reported by iron works regarding the use of waste sulphite liquor for briquetting coke dust and fine ore. According to Mathesius the reduction of iron ore is more favorable with briquettes, and a great saving in coke and an increased production has been experienced.

In late years a product called "Zellpech" or "cell-pitch" has been manufactured and has occasioned considerable interesting discussion. The product is obtained by neutralizing the cooled liquor in wooden vats and filtering it through coke, whereupon the filtrate is concentrated by evaporation to a density of 35° Be, and used in this form, or is evaporated to dryness and made into blocks. This pitch contains 10 per cent moisture and represents 10 per cent of the original liquor. It has the appearance of a black, opaque resin and is soluble in water. For the production of one ton of "cell-pitch" one ton of coal is required. Its heat value is 3,166 calories (5,700 B.T.U.). The price of 10-12 dollars (in 1912) per ton is very close to that of tar. But for binding fine coal only 5 per cent of this pitch is required, whereas 7-10 per cent of tar pitch is used. Cell-pitch is also used for impregnating sail-cloth and ropes, and as a filling material. Blast furnace dust containing about 40 per cent iron may be mixed with ground cell-pitch, the proportion of pitch being 4-5 per cent. The mixture is heated with superheated steam at 350 to 420° C, and pressed into bricks. These bricks do not lose their shape in the furnace at a temperature of 1000 C.

Cell-pitch, as well as in America waste sulphite liquor concentrated and neutralized has been used as a road binder with apparent success. The United States

Department of Agriculture made extensive experiments with waste sulphite liquor, with the result that concentrated liquor of a specific gravity of 1.13 may be classified as a temporary or semi-permanent dust preventive and road-binder. Half a gallon per square yard was effective for a period of 6 weeks. The cost including labour and material was estimated to be \$0.0355 per square yard. The results of comparative tests at Queen's University, Kingston, Ontario, were in favour of using concentrated (4.1) waste sulphite liquor instead of road oil. The road oil was washed away at the end of four months, whereas the roads treated with waste liquor directly or after previous treatment with oil still presented a hard surface at the end of that period. It has been suggested that the binding and water-resisting qualities be improved by emulsifying the liquor with mineral oil.

#### Gums, Adhesives, and Sizing Materials.

In the preceding chapter it was shown that the evaporated sulphite liquor can be used either alone or in mixture with other substances as a binding material. It has also been suggested to use the waste sulphite liquor remaining after fermentation and production of alcohol for paper-sizing, in mixture with rosin soap.

Cross and Bevan showed as early as 1883 that when gelatin or albumen is added to the waste sulphite liquor substances are precipitated which they called respectively "gela-lignosin" and "albu-lignosin," both of which are suitable for use as size, mordants, etc.

The product is similar to that obtained by Ekman's patents, according to which a "dextrone" is produced by evaporating the liquor after it is made alkaline and adding to the acidified, concentrated liquor soluble salts such as the chloride or sulphite of sodium. If this product is mixed with gelatin or glue a compound is obtained which can be dissolved and used as a mordant or size.

Mitscherlich's "Gerbleim" or "tannin size" is, like the "lignosin" formed by precipitation of the acid sulphite liquor with glue or albuminous bodies. The substance can be dissolved in alkaline solution and reprecipitated by the addition of alum. The product is recommended as a paper size in mixture with rosin size. The numerous patents connected with this process show in detail how the size is prepared.

According to Mitscherlich's German Patent 235965 a suitable emulsion for paper-sizing is prepared as follows: A solution of horn in soda is mixed with sulphite liquor, previously treated with sodium sulphate, and the mixture precipitated with hydrochloric acid. The precipitate is washed out and dissolved in borax. Rosin size is added to this solution, whereupon an emulsion is obtained which, diluted with water, can be precipitated with alum or with rock-salt.

Adhesives may also be produced by concentrating the waste liquor to which carbonate oxide of zinc has been added or by concentrating in vacuo with an excess of magnesium oxide and adding magnesium chloride in a proportion equivalent to the amount of magnesium oxide remaining in excess, to form the oxychloride.

It is claimed that resinous matters can be obtained from waste sulphite liquor by hydrolysis in a container divided by a diaphragm. A treatment of the liquor with chlorates in order to remove the tannic acid, and a subsequent concentration of the liquors with protein substances in order to produce an adhesive substance, is recommended by Katz and by Schweinburg.

#### Tanning Materials.

In 1878 Mitscherlich obtained a German patent for a

process for extracting tannin and other substances from oak with calcium-sulphite solutions at a temperature above 108°C., with the simultaneous production of cellulose and acetic acid as by-products. Since that time a great number of patents have been granted for methods utilizing waste liquor produced in the manufacture of sulphite pulp from coniferous woods, but no other questions in connection with this problem have been discussed with more interest and with more diversity of opinion than those regarding the suitability of the waste sulphite liquor for tanning purposes. It has, in fact, been doubted whether the liquor contains substances with tanning properties. The actual presence of tannin in the ordinary waste sulphite liquor has never been definitely proven, although it has been claimed by some investigators. Evidently the presence of tannin has in some cases been concluded from the fact that the waste sulphite liquor precipitates a glue solution and gives a faint colour reaction with iron solutions, both of which reactions are no doubt caused by certain substances very similar to tannin. Spruce wood contains some tannin which might pass into the liquor during the cooking process, but even assuming a tannin content of 3 per cent in spruce wood, which of course is a very high estimate, Landmark calculates a maximum tannin content of 0.6 per cent in the waste liquor, corresponding to about 2.4 per cent in the concentrated extract of 27° Bé. It is, however, very probable that the tannin originally present in the wood is decomposed at the high temperature of the cooking process. However, since it has been shown by experiments that a hide absorbs from a good "sulphite extract" as much as 23-25 per cent of substances which are able to transform the hide into a leather, it must be concluded that these substances do not originate with the tannin of the wood but consist mostly of the sulphonic acids of the lignin, the organic bodies which give the reactions with glue and iron solution.

The concentrated tanning extracts from sulphite liquor are placed on the market under various names such as "Fichtenholz," "spruce wood," "pine wood," "excelsior," "sulphite extract liquor," etc. The fact that the tanning extracts from sulphite liquor may be products of very different treatments may account for the diversity of opinion regarding their tanning qualities.

In preparing a tanning extract from waste sulphite liquor it is necessary to remove certain substances which are not desired in the ultimate product and also to concentrate the liquor to about 30° Bé. The free and loosely combined sulphurous acid may be removed by heating with or without the addition of sulphuric acid or may be precipitated with part of the lime, as calcium sulphite, by adding the required quantity of lime. The lime organically combined is usually removed by precipitation with sulphuric acid or a soluble sulphate. Oxalic acid is often recommended for the removal of the last traces of lime, or lactic acid is used since the calcium compound of lactic acid is found to have no injurious effect in the tanning process. If zinc dust and sulphuric acid are added to the liquor a discolouring effect is obtained.

Other processes for the preparation of a tanning material make use of the addition of the sesquioxide of aluminium and chromium or the heating of the liquor with cyanide of potassium or sodium and the precipitation of an organic cyanogen with an acid.

According to Byrom's patent the liquors are treated with phenols, amino compounds, or naphthalene disul-

phonic acids or mixtures of these substances, or with the middle fraction or the heavy oil from the distillation of coal, whereupon a soluble, light, tanning extract is obtained.

The variety of the processes which will be noted in the following abstracts probably gives the best explanation of the different results arrived at by practical tanning tests. It is claimed that sulphite extract when used alone or in large quantity in mixture with other extracts gives only a leather of inferior quality, and it is probable that the sulphite extract when used alone will not give a satisfactory product, although it has been stated on the other hand that this extract alone, if it is properly prepared, will give a leather superior to both hemlock and oak leathers.

For a successful tannage it is desirable to have a certain proportion between the tanning materials and non-tannins, and it is therefore of advantage to mix extracts of different composition in order to obtain this proportion. The sulphite extract has a high percentage of non-tannins. It has therefore been successfully mixed with quebracho extract, which has a considerable proportion of tannins but a low non-tannin content. The sulphite extract appears to be a good solvent for the portions of the quebracho extract, which are soluble with difficulty, namely the phlobaphenes, whereby a better utilization of the tannins is secured, but the greatest advantages of the employment of sulphite extract in mixture with other extracts are apparently an acceleration of the tanning process and a lighter colour of the leather. Landmark also claims a higher yield, that is a higher absorption (up to 18 per cent more), with mixtures of quebracho and sulphite extracts than with quebracho alone, and assuming a price of \$0.18 per kilogramme for quebracho extract of 25°-26° Bé. and a price of \$0.056 per kilogramme for sulphite of 27° Bé. and assuming, further, a mixture in the proportion 1:1 he arrives at a saving in tanning material of \$5.11 per 100 kilogrammes of leather. According to a letter from Mr. Landmark the sulphite extract produced in Norway and put on the market under the name "Norego" is extensively used in Norway and Sweden, usually in admixture with quebracho extract to as high as 50 per cent, to the satisfaction of the tanners. Whenever the tanners have been opposed to the use of the sulphite extract alone or added to another extract in a large proportion has caused a "timminess" and brittleness in the final leather. But this is no doubt caused by the use of extracts not properly prepared and purified. Even small quantities of iron and lime (which should not be present in such quantities as to be detected in the extract) will have a decided detrimental effect upon the leather. A proper removal of these substances, therefore, is essential in the preparation of the extracts. The tanners admit that the sulphite extract is useful as a weighting material and as a substitute for molasses and dextrose, and has the same value as those substances. But, while the latter can be with comparative ease washed out of the leather with water the substances of the sulphite extract are more intimately combined with the leather. In fact, the sulphite extract is in some cases so well fixed in the leather that it cannot be detected by methods based upon the extraction of the leather with water.

As there may still be many lower grades of sulphite extracts on the market it is very important to be able to detect their presence in mixture. Analytical methods for this purpose have often been discussed and rather complete abstracts of such discussions are included in this section.

Table 1. Tables taken from different authors serve to give comparisons of various commercial sulphite extracts. Either gives the comparative analysis of various extracts as follows:

	Hungarian Ext. %	German Ext. %	Excelsior Ext. %
Substances removed by hide powder . . . . .	22.8	22.6	25.8
Substances not removed by hide powder . . . . .	27.5	28.2	28.0
Water . . . . .	49.6	49.0	46.2

Beveridge gives the following table:

	Sulphite Liquor Extract. (Spruce). %	Sulphite Liquor Extract. (Hemlock). %	Extracted from Hemlock Bark with Water. %
Moisture . . . . .	41.34	47.93	54.24
Total solids . . . . .	58.68	52.07	45.76
Soluble solids . . . . .	58.61	51.93	41.93
Insoluble solids . . . . .	0.07	0.14	3.83
Non-tannins . . . . .	39.36	24.84	16.63
Specific gravity . . . . .	1.290	1.269	1.215

If calculated on total solids the amount of tannin is respectively 32.80 per cent, 52.02 per cent and 55.29 per cent.

The following table is taken from Landmark's publication "Sulphite Liquor as a Tanning Material," and represents a comparison of various sulphite extracts with tannin extract obtained from spruce.

Spruce Bark.	Bé.	Tannins.	Non-Tannins.	Total Solids.	In-soluble.	Water.	Sugar.	Ash.
	%	%	%	%	%	%	%	%
Spruce Bark. Extract (Swedish) . . . . .	24°	22.2	19.1	41.3	2.6	56.1	4.6	2.5
Hocklingsen). Cellulose fabrik . . . . .	32°	20.6	31.1	51.7	0.0	48.3	2.4	13.8
Gewerkschaft "Pionier" . . . . .	33°	25.8	27.4	53.2	0.0	46.8	8.0	8.5
Hansa) Combined Fichtenholz extract . . . . .	33°	29.0	31.3	60.3	0.1	39.6	11.6°)	7.9
Hansa) Combined Fichtenholz extract . . . . .	27°	25.0	22.6	47.6	0.0	52.4	....	5.4
Owens Extract. David Owen & Son. . . . .	34°	22.3	38.9	61.2	1.1	37.7	11.6°)	7.6
Owens Ext. 12-12-13 from Rink Bros., London . . . . .	33°	24.4	33.9	58.3	0.3	41.4	13.6°)	7.6
American) Sulphite-Extract. . . . .	27.2	30.2	16.3	46.5	0.1	53.4	3.8	3.9
Saxonia from Paul Golden & Co., sample 12-2-14 . . . . .	27°	24.7	20.1	44.8	0.0	55.2	3.9	5.3
Excelsior . . . . .	31°	16.55	33.80	50.35	0.0	49.65	....	12.16
Hoersch . . . . .	33°	28.39	20.13	48.52	4.63	46.85	....	5.60
Heymann . . . . .	24°	14.65	24.46	39.11	0.0	49.65	....	5.85
Muskegon) . . . . .	30°	30.73	19.50	50.23	4.63	46.85	....	2.0
Norego . . . . .	33.7°	28.3	31.6	59.9	0.1	40.0	10.0	6.7
Norego . . . . .	27°	24.21	20.42	44.63	0.0	55.37	....	2.91

Hansa is mixed with gambier.

The proportion between tanning and non-tanning substances show that the extract is mixed to a large extent with other vegetable extract. The sugar content also indicated this.

Hocklingsen analysed by the shaking method, the others by the filter method. The analysis of Hansa is given by the firm.

The sugar tested in a sample by H. Landmark.

The high sugar content originates with some colouring substances which are not precipitated by lead acetate.

The proportion between tannins and non-tannins proves that the extract is not pure sulphite extract but mixed with other extract.

(To be Concluded.)

**ANOTHER FIRE AT THE ONTARIO PAPER CO.**

Just about a year ago the spectacular fire occurred at the Ontario paper mill when their immense pile of pulpwood caught, and such great damage was wrought. Fire was again discovered just before 5 p.m., July 21st. While the fire was nasty in a way to get at, yet so good was the execution done by the firemen that about seven o'clock all danger was past.

The origin of the fire is supposed to have been a hot box at the dry end of one of the machines, the paper igniting and flashing upward immediately to the ceiling with the motion of the heated air at that point. This accounts for the great fight being in the roof. The dryer felt of that machine was destroyed, which is the chief loss aside from the roof, though the machine itself, of course, needed some cleaning up.

The damage was kept well localized as the making of paper was resumed next day. The mill has three machines, one 164in, and two 202ins.

**TREND OF BRAZIL'S TRADE.**

The United States during the last five years has become the chief factor in Brazil's import trade. In 1918, when Brazil's total imports aggregated \$247,000,000, the United States supplied commodities valued at \$89,000,000. British shipments to Brazil amounted to \$50,000,000; Argentine, \$47,000,000, and French, \$12,000,000.

In 1913 the United Kingdom led in exports to Brazil, supplying her with goods valued at \$80,000,000 out of total imports of \$326,000,000. Germany sent goods amounting to \$57,000,000; the United States, \$51,000,000; France, \$32,000,000, and Argentina, \$24,000,000.—National Bank of Commerce in New York.



## British Newsprint Trade Lively

(From Our London Correspondent.)

London, July 14, 1919.

There is a real live business going on in the newspaper industry of the United Kingdom and consequently the demand for newsprint is improving every week. Prices are stiffening and dealers are looking very pleased over some of the orders they recently booked. All kinds of papers used in the printing industry are in demand, and, as an indication of the trade printers are enjoying, I need only mention that they are mostly in the large firms working extra hours. It is very gratifying to notice that Canadian newsprint is finding its way considerably into some of these extensive newspaper firms in London and the provinces, and a general manager informed me the other day that he was well pleased with the quality that was being supplied through his dealer. Canadian paper is cheaper here on the market and Canadian competition is going to be felt. Complaints are already being heard amongst the British mill owners of the cheapness of the Canadian article. They maintain that in British mills newsprint could not be turned out so cheap owing to shortness of skilled workers and the price of pulp in the market to-day.

### Labor Troubles Cloud Horizon.

Just as the paper mills in England are beginning to get busy labor troubles arise and the position, as I write these notes, is somewhat critical. The mill workers are demanding a three shift week of 126 hours for the shift workers and a 44 hour week for those employed on day work only. As a compromise the mill owners offered 136 hour week of three shifts. Notices to cease work have already been handed in at the mills, but only at Bury, in Lancashire, did employees cease work. London immediately got into touch with Bury and advised the workers to return to the mills until their case was settled. Meantime a conference between the executive of the Papermakers Union and employers and the Ministry of Labor took place on the new demands and the discussions have been lengthy. The workers are very keen in their demands and the growing unrest in favor of shorter hours and more wages throughout the country acts as an incentive to them and the question of a short three shift has been a bone of contention since 1912. With the mill owners there has been a division of opinion. Some are in favor of a short shift and others are not. At all events the subject will have to be faced in real earnest very shortly. The Government, however, is with the men. (A cablegram from Mr. Dawe, printed last week, indicates the mills have met the men more than half way, by granting three shifts.)

### British Prices on Scandinavian Pulp.

The market for all kinds of pulp has changed very little since my last report. Shipments from Scandinavia are small and the Norwegian Chamber of Commerce in London have backed up my statement in my last notes, viz., that a good many mills have been closed down in Norway and Sweden partly owing to increased stocks and partly to high cost of production. They quote their prices as follows: Bleached sulphite £37 to £38; easy bleaching sulphite £25 to £26; strong sulphite £22 10s to £24; easy bleaching soda £23 to £24; strong soda £21 to £23. c.i.f. British ports, inclusive of agents commission. Mechanical is ranged at £8 2s 6d to £8 5s for ordinary and £8 10s to £8 15s for fine ground moist pulps c.i.f. British ports in-

clusive of agent's commission. It is interesting to note that Canadian offers have been made below these prices but unfortunately the shipping question did not permit of much business changing hands. Finnish pulp is being shipped to the United States in fairly large quantities. Seeing that most of the pulp trade in England is covered by Scandinavia the foregoing prices may be taken as being about the pulp quotations at present.

### Newspaper Case Dismissed by Court.

Messrs. E. Hulton & Co., Ltd., who publish the "Daily Sketch," "Evening Standard" and other progressive newspapers in London and Manchester had a case in the House of Lords against Messrs. Chadwick and Taylor (Ltd.), paper manufacturers, Salford, for alleged breach of contract in supplying paper and for repayment of money stated to be overpaid. The case was unanimously dismissed by the House of Lords, six eminent Lords of Appeal being engaged in the hearing, and the sums at stake were said to reach £34,107. The paper manufacturer's case was that at the outbreak of war the subsisting contracts were either suspended or dissolved, that supplies were sent Messrs. Hulton subsequently at higher prices by virtue of substituted agreements. Messrs. Hulton contended that the higher prices paid by them were done so without prejudice to any eventual claim for the differences. Mr. Justice Atkin said that Messrs. Hulton could recover damages down to March 1st, 1916, for breach of contract, but in the period subsequent to that the Paper Commission rendered further performance of the contract impossible. The Court of Appeal below gave judgment for the paper makers upon the whole action and now Messrs. Hulton carried the case into the House of Lords.

The Lord Chancellor in moving that the appeal be dismissed pointed out that from the discussions there could be no doubt that both parties made up their minds that the pre-war price should not be insisted upon. The decision was very intelligible on both sides. Messrs. Hulton had strong reasons for not insisting as it was urgently necessary in order to produce their newspapers that they should receive the paper—the contract amount of paper. Unless they reached an accommodation with Messrs. Chadwick & Taylor it would have become necessary to buy, or attempt to buy, in the market against them, holding them responsible for the difference in price between the rates then prevailing and those provided by the original contracts. The inconvenience and risk of such a course were apparent. There was, therefore, no a priori unreasonableness in an arrangement which in his (lordship's) view was actually made. Regarding the effect of the regulations of the Paper Commission, the appellants were in exactly the position of a 1914 customer who had no 1916 contract. The fact that they had a 1916 contract was an irrelevant accident. Being thrown back upon a new and artificially produced contract they never agreed upon a price and it followed that Messrs. Hulton were liable to pay a reasonable price for the paper which they had been supplied with.

Mr. Wm. Heinemann, the well-known publisher, announces that owing to the cost of binding cloth most of his books will be henceforth issued in paper covers. Paper is costing him well over 100 per cent above pre-war prices and printing 130 per cent, and binding 250

per cent. Here is a chance now for some Canadian firm to send Mr. Heinemann a few samples of paper that will take up the place of the cloth. The French people are fond of paper-bound books and there is a good opening for a nice substitute for the proverbial cloth back. (We have seen some fine Canadian kraft covers.—Ed.

The Government stationery office is coming in for a good deal of criticism in London owing to the amount of paper the department is getting through and there is a contention that an official watchdog should be appointed to check the waste. As a matter of fact the waste lies with the departments which gives the orders to the stationery office and an instance of this may be cited. The Food Ministry ordered 6,000,000 copies of one pamphlet and when they had been printed it was discovered that an error had been made in it by a Food Ministry official—not the printer—and the whole lot became scrap.

#### NEWSPRINT PRICE TO BE MAINTAINED

New York, July 29. — Manufacturers of newsprint do not look for any reduction in the price of their product when Government regulation of prices ceases. On the contrary, they maintain, quotations higher than present figures will prevail for some time to come. It is their contention that until the readjustment of the industry to a normal basis is well under way and production costs are lowered, particularly labor, prices will remain high.

Under the terms of the agreement signed by practically all the large newsprint manufacturers of this country with the Attorney-General regulation of price of their product by the Federal Trade Commission was to continue until three months after the ending of the war. It was also stipulated that the output of these companies was to be sold in the United States. Government regulation ceases about October 1 next. Present price for newsprint in carloads established by the Trade Commission is \$3.7525 a hundred pounds.

One of the larger New York city daily papers recently paid \$4.125 a hundred when its own supply proved inadequate, and as high as \$4.50 is now being paid for newsprint bought in the open market purchased from manufacturers who did not sign the agreement with the Government. Paper for export is also commanding high prices.

While there has been considerable construction of new mills planned for Canada since the ending of the war, little, if any, is contemplated for the United States. So far this year, new machines with a daily capacity of a hundred tons have been installed in this country. This is more than offset by the closing down of the Niagara Falls mill of the International Paper Company, which had a daily output of 165 tons. This mill was closed by the Government shortly after the entry of the United States into the war, on account of the power shortage at Niagara Falls.

Another feature which tends to make for high prices for newsprint is the fact that many manufacturers are shipping their product to South America and Europe, taking advantage of the high prices prevailing abroad. It is estimated that in May 35,000,000 pounds of newsprint were shipped abroad, compared with 12,000,000 pounds during May, 1918.

Jame Home, president of the Beveridge Paper Co., Montreal, is the proud father of a son, who arrived July 25th. Our congratulations.

#### GRAND MERE TWICE VICTORS.

On July 13th the Grand Mere football and tennis teams went down to Shawing Falls and brought home two victories. The football score was 3—0, and tennis 6—2. Both were interesting matches.

Another important item in the big construction program at the Laurentide plant has been commenced. Preliminary work is in progress on the sinking of caissons and the construction of piers for a new tail race block.

The contract for the construction of the caissons, and the piers which will rest upon these caissons, has been let to Fraser Brace and Company, of Montreal. The necessary concrete will be furnished to Fraser Brace by the Laurentide organization. The construction department staff will mix this concrete and deliver it to the contractors, whose men will place it where it is required. In addition to the present force the department will require about 75 extra men. It is likely that the work will take until fall. The cost will likely be in the neighborhood of \$150,000.

The magazine circulating library which is conducted by the Employment Department is proving a boon to many employes of the company, who wish to keep up-to-date on matters connected with their particular branches of the industry. There are 14 magazines on the list.

#### TO BUILD A DAM FOR NASHWAAK.

The Ambursen Hydraulic Construction Company of Canada, Limited, has been awarded the contract for a dam and water power development for the Nashwaak Pulp & Paper Co., Ltd., at Marysville, N.B. This looks like an indication that the new mill predicted last winter is going forward.

#### TO OPEN CANADIAN OFFICE IN STATES.

Ottawa, July 28.—Lieut.-Col. John A. Cooper arrived in the city today on his way to New York, where he is to open a Canadian Government publicity office. In the preliminary organization work Colonel Cooper will have the assistance of M. E. Nichols, director of Public Information, who left for New York this afternoon.

#### FOREST FIRES STILL RAGE.

Forest fires have been doing untold damage to timber in the vicinity of Fort William, Ont., and in the Upper Michigan peninsula, where at least one village was destroyed last week. It does beat all reason why people will leave the woods in condition to invite a fire from an engine spark, or their own carelessly built fire and then expect the Lord to put it out with a rain. Fires have broken out again in Washington and Montana.

#### SHIPS TO CARRY CANADIAN PULP.

London, July 29.—The request of the Canadian pulp and paper manufacturers recently made to the Minister of Marine in Canada for more transportation facilities for their products, is being taken up in London. Inquiries have been made at the Ministry of Shipping as to the possibility of obtaining more cargo space.

It has incidentally been found that the Harmsworth people now have four steamers with a tonnage of 22,000 engaged in shipping pulp and paper from Canada to Britain; the Becker interests have five vessels of 30,000 tons, and the Erikson interests one ship of 5,500 tons.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-1. Scheme for the analytical investigation of vegetable fibrous materials and the cellulose prepared from them.** C. G. Schwalbe. *Verein Deut. Chem.* Sept., 1918; *Z. Angew. Chem.* **31**, 193-4 (1918). *J. Soc. Chem. Ind.* **37**, 685-6A. The time is ripe for a co-ordinated reinvestigation on a uniform basis of all the standard raw materials of the textile and cellulose industries, in order that the proximate composition of these can be definitely fixed, the variations due to environment, etc., defined, and the results utilized for the classification and evaluation of new or little known materials. S. discussed the question of the selection of the analytical "constituents" of most general significance and of the standardization of methods and apparatus. These quotations should be settled by a committee of recognized standing, and data should be accumulated on the agreed basis. The scheme of analysis proposed by Cross and Bevan and utilized by other investigators is regarded as not fully adapted to the light of modern knowledge; it is considered to be unnecessarily long and to contain factors of undetermined significance. The abbreviated scheme recommended by S. comprises determinations of ash, moisture, fat, wax and resin, cellulose, furfural, methylfurfural, and methoxyl. The pentosans are satisfactorily represented by the furfural value, but certain standardization of methods and apparatus is required to ensure concordant results. The lignin may be taken to be represented by the methoxyl value, but it is possible that this requires correction by the results found for methylfurfural which is supposed to represent methylpentosans. (*Chem. Abs.*)

**A-3. Australian papermaking.** *Pulp & Paper Magazine*, **17**, No. 28, p. 555, (1919.) It has been concluded that myrtle, swamp gum, blue gum, stringy bark, hutton bog rush, awned saw sedge, Queensland hemp, saltbush, spinifex grass and parts of the stems of the zamia palm are not suitable raw materials. Young karri trees, blady grass and marram grass are more promising.—R. C.

**A-4, B-0. Destruction of wood and pulp by fungi and bacteria.** Prof. S. F. Aeere, *Pulp & Paper Magazine*, **17**, No. 28, p. 569 (1919.)—R. C.

**A-4, A-5. Essentials of wood pulp testing.** F. M. Williams, *Paper*, **24**, (1919) No. 15, page 36-38. Description of a new drying oven for determining moisture. Proper requisites are an accurate balance and an oven capable of handling samples representing at least 5 per cent. of the production of the mill.—E.K.M.

**A-5 The American aspen cellulose.** Victor Litchauer. *Centr. für oesterr. Papier Industrie* **23**, (1918). *Paper* **23**, No. 646-52 (1919.) A contribution to the microscopy of American aspen cellulose, together with a discussion of the commercial yield from poplar pulpwood. R. B. Roe in C.A.

**A-11. Clays for use in paper making.** Ralph B. Roe. *J. Am. Ceram. Soc.*, **2**, 69-72 (1919.) The important points are color, grit and retention. Color is compared directly with the standard white sample. Grit is de-

termined by wet sieving through 200 mesh sieve. The best clays show not over 0.20% residue and many show under 0.10%. Retention is the ratio of the amount retained in the paper to the amount added. There is no satisfactory laboratory test. Domestic clays are being increasingly used. (C. H. Kerr in C.A.)

**A-11. American clays and the paper industry.** T. Poole Maynard. *Chemical Engineer*, **27**, 59-62 (1919). Paper Making clays of American origin are mined almost exclusively in South Carolina and Georgia. War conditions have stimulated the use of American clays instead of English, but the latter are much preferred particularly for coated papers. Some of the essential qualities of a paper-making clay are discussed, and the need for research and co-operation between the paper manufacturer and clay producer is shown. R. B. Roe in C.A.

**A-12. Casein and coating mixtures.** E. Sutermeister. *Paper*, **24**, 217-20 (1919.) Eight different samples of commercial casein were examined by the MacMichael viscometer. The viscosity varied greatly between the different samples, even when dissolved in the same solvent. Three solvents were used, and while the viscosity varied greatly among the three solvents there was no consistent variation among the different samples. The viscosity was tested when the caseins were mixed with a clay as in a coating mixture, and it was found impossible to predict the viscosity of the coating mixture from the viscosity of the casein itself. Different solvents greatly influenced the viscosity of the mixtures. The same casein solution was tested in connection with five different clays and the result showed that most clays will yield approximately the same viscosity. An occasional sample of clay will show a marked divergence. The viscosity of the different caseins when mixed with clay and satin white showed a tendency to follow the viscosity values of the casein-clay mixtures. The mixtures of casein-clay-satin white were also tested at 3 temperatures and the viscosity in general decreased as the temperature increased. In one of the samples, however, it increased markedly with the temperature. The effect of the time of heating has a marked influence on the viscosity with two of the solvents used, and very little with the third. The viscosities of the different caseins were determined when they were made into a coating mixture using varying amounts of different solvents. In general, Na<sub>2</sub>PO<sub>4</sub> gave the most fluid mixture and NH<sub>4</sub>OH the thickest mixture. The other solvents used, NaOH, Na<sub>2</sub>CO<sub>3</sub>, Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>, were intermediate, being good for one casein and unsatisfactory for others. Mixtures of two different caseins, when made into a coating mixture with clay and satin white, failed to give more than roughly approximately the average viscosity of separate tests on the individual caseins.—R. B. Roe in C. A.

**B-2. Notes on reforestation in Quebec.** G. C. Piche. *Pulp & Paper Magazine*, **17**, No. 28, p. 544, (1919.) A discussion of the reasons for reforestation and of the return to be expected are given.—R. C.



# UNITED STATES NOTES

The business outlook for the paper industry is viewed most optimistically by American Writing Company officials. In a bulletin issued by this company last week it is pointed out that a new price level has been reached in the United States that is not likely to decline materially for a decade or more. "The trend," says the bulletin, "is downward, but the movement slow, and the consensus is that pre-war prices are no more to be expected than pre-war conditions. Taxation and labor will play a tremendous part in the holding up of prices, for a margin of profit must always be had after production costs and taxes have been met. The business men in the country are finding in the high price level one of the best indications of prosperity." The business of the American Writing Paper Company, according to George A. Galliver, its president, is showing a gradual betterment. Mr. Galliver is particularly optimistic concerning the writing paper market. He says that in all probability the American Writing Paper Company will be operating near the capacity mark before many more months. This, he believes, indicates that the paper buying public is experiencing new confidence in the present prices and is accepting them on the supposition that there will be no substantial decrease.

The election of two new officers of the big writing paper company was confirmed at the monthly meeting of its Board of Directors, held at New York on July 15. The men chosen are John T. Wolohan and Raymond R. Cambell, both as vice-presidents, their names having been voted on at an executive committee meeting specially called during the previous week. Each of these two gentlemen has rendered splendid service to the company in other capacities and their elevation to this favored position comes as a fitting reward. In the many years of his connection with the American Writing Paper Company Mr. Wolohan won for himself the reputation of being its "star salesman," and throughout the paper trade world he has come to be known by the sobriquet, "Honest John Wolohan." Mr. Cambell has been with the American Writing Company for only a year and a half, but during that time as assistant on production to the president, Mr. George A. Galliver, he has had much to do with the consideration of the problems that arise in the manufacturing end of the industry, and his acumen and executive ability have been brought to bear upon them with credit not only to himself, but to the advancement of the company's interests, which he has so much at heart.

Cohoes, N.Y., is to have a new paper mill ground having been broken recently on a site near the plant of the Gilbert Paper Company. James E. Glenhill, of New York City, the owner of the projected plant, is prepared to expend \$200,000 in the erection of the new mill. A Troy, N.Y., firm has charge of the construction work. When the mill is ready for operation, it is expected that employment will be given to about 100 persons.

Two of the big paper companies have fallen in line, following the lead of the American Writing Paper Company, and other well known paper manufacturing concerns, and have arranged to insure the lives of their

employees on the group insurance plan. Group policies, it has just been announced, have been taken out for all the employees in the mills of the Carew Manufacturing Company, and the Hampshire Paper Company at South Hadley Falls, Mass. This life insurance protection is based upon the number of years service of each employee with the minimum of \$500 effective immediately at the time of employment and an increase of \$100 per year up to twenty years, a maximum of \$2,500. An important feature under this group insurance arrangement is the health and accident clause which will give one-half wage for a period of twenty-six weeks in case of sickness or accident.

Following a special meeting of stockholders July 15 of the Standard Paper Company at Kalamazoo, Mich., announcement was made of plans for the expansion of the company to include an increase in the capital stock to \$360,000, and the erection of an administration and storage building, providing 120,000 square feet of floor space. The original stock of the company was \$200,000 common, of which \$180,000 had been subscribed and paid in. It was voted to increase the paid-up capital to \$360,000 by selling \$180,000 common stock at \$15 a share to stockholders of present record. The fund of \$270,000 derived from the sale of this stock will be used to increase the business, the first step being the erection of a handsome fireproof administration and storage building just south of the present Standard mill. Another improvement to be made will be an enlargement of the power plant by the addition of a 600 horse-power oilless engine and a turbine-driven generator of 300 horse-power capacity. Mr. John F. Byrnes, former general superintendent of the Michigan Carton Co., of Battle Creek, joins the company's executive staff as general manager, and Emil Yahnke, assistant superintendent has been appointed superintendent to succeed John Driessen, who has resigned.

The recently incorporated Oregon Pulp and Paper Company has completed plans for the construction of its paper mill at Salem, Oregon. It is proposed to erect a main building constructed in such a manner that as business grows another paper making machine can be placed in part of the plant. Should the business require still another machine, a stock room building will be erected on the present site of a water company office, which site can be made available for the purpose. The Oregon Pulp and Paper Company is capitalized at \$800,000. At a recent directors' meeting the following officers were elected: F. W. Ledbetter, president; Charles K. Spaulding, vice-president; A. N. Bush, treasurer, and Roy H. Mills, secretary.

Paper made by the pulping of cotton hull fibre and conversion of this pulp into paper was put to practical use on a somewhat extensive scale for the first time recently when the New Print Service Bureau printed its entire issue of this month's bulletin on paper made of this product. The supply of this paper was furnished by the Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, at Madison, Wis. This cotton fibre pulp has been shown by experiment to be suitable for the manufacture of books, writing, blotting, cover and other high grades of paper, and is equal in quality with the higher grades of paper stock.

# PULP AND PAPER NEWS

E. G. R. Clarke, of Toronto, who recently returned from Siberia, where he was with the Canadian Expeditionary Force, and is a widely known and aggressive paper salesman, has taken a position with the Ault & Wilborg, of Canada, Limited, manufacturers of printing inks, and will cover part of Toronto and the Province of Ontario.

G. H. Allen, manager of the Calgary branch of the John Martin Paper Co., Winnipeg, was in Toronto this week and called upon a number of friends in the trade. He was on his way to the Muskoka Lakes, where he will spend a well earned holiday.

A. P. Costigane, of Toronto, Safety Engineer of the Ontario Pulp and Paper Makers' Association, accompanied by his wife and family, is enjoying a vacation at the Peninsular Park hotel, Big Bay Point, Lake Simcoe.

Wm. Innes, the representative of the Interlake Tissue Mills, Limited, in London, England, who served four years in the war, and since the signing of the armistice has been looking after the company's interests in the Old Country, has returned to Canada. He has taken a temporary position at the mills in Merritton, until such time as the industry catches up with the large amount of foreign and domestic business in hand.

Capt. C. E. Niely, late of the selling staff of the Toronto Paper Mfg. Co., Toronto, has been spending his holidays at Minett, Lake Rosseau, Muskoka. On his return he will enter upon his new duties with J. M. Dent & Sons, Limited, publishers, Toronto, with whom he has taken a responsible position.

Another new publication is about to be launched in Toronto, which will be known as "Baby's Own Magazine," and will be devoted entirely to baby welfare. The magazine will be issued monthly and the manager will be Hubert Groves, business manager of the Municipal Intelligence Department. It is also announced that Maelan's Magazine, Toronto, which has been published monthly for many years, will early in 1920 be issued semi-monthly, appearing on the first and fifteenth of each month.

Sam Berger, who has been at the Sault mill of the Spanish River Pulp & Paper Mills, is now located at Espanola as resident chemist. Mr. Berger is a graduate of the University of Maine in Pulp and Paper Technology, and has worked in mills in New Hampshire and Quebec, besides serving in the U. S. Army.

A fire broke out recently in the machine room of the Ontario Paper Co., Thorold, and climbed to the roof. After a stubborn fight by the Thorold brigade, assisted by the departments from Merritton, St. Catharines and Niagara Falls, the flames were extinguished, but not before considerable damage had been done to the roof and large stocks of paper and felt which were stored below. The loss is fully covered by insurance and the origin of the fire is unknown.

The will of the late W. P. Gundy, of Toronto, President of W. J. Gage and Co., manufacturing stationers, Toronto, and the Kinleith Paper Co., St. Catharines,

has been filed for probate. The total value of the estate is \$193,352. Mr. Gundy held shares in the Gage Co., valued at \$68,200; in the Educational Book Co. at \$27,060, and in the Kinleith Paper Mills at \$21,750, besides shares in the C. P. R., Standard Loan Co., and other concerns.

Lieut.-Col. John A. Cooper, who recently returned to Toronto from serving several years overseas, has gone to New York to open a publicity bureau in that city for the Dominion Government. The new bureau will furnish the latest data on the progress and development of Canada from a financial, commercial and agricultural standpoint, and the work is of considerable national importance, for which Col. Cooper is well equipped. He was for many years editor of the Canadian Magazine and later the Canadian Courier. He is also a past President of the Canadian Press Association.

James A. Lambert, who for many years was publisher of the "Representative," Mount Forest, Ont., which paper he disposed of a year ago, and has since been living in Toronto, passed away after a short illness recently, aged sixty-two years. The remains were interred in Mount Forest. He leaves two sons, Norman P. Lambert of Winnipeg, and Elmer H. Lambert, of Toronto, both of whom were until recently engaged in newspaper work.

Fred T. Hodgson, of Collingwood, Ont., died recently in his eighty-ninth year. For many years he was the editor of the "American Builder," of New York, and was a contributor to many journals in the architectural field as well as the author of a series of widely known technical text-books.

A. L. Simpson of Winnipeg, was in Toronto last week calling upon his many old friends in the paper trade. He is a former well known Toronto printer and is now the publisher of "Winnipeg Once-A-Week," "Western Canada Old Fellow," and other mediums.

It is announced that plans for the erection of the proposed pulp and paper plant in Winnipeg are making progress and that the approval of the Federal government for the enterprise has been obtained. The by-law on the proposition will be voted upon this fall and if it carries the project will go ahead. It is stated that it will be necessary to supplement the local supply of pulpwood by drawing from the timber limits in Northern Ontario.

La Press Publishing Co., Limited, Montreal, have bought the property and buildings at the southwest corner of Craig and St. Lawrence streets, with the buildings thereon, for \$106,000. The newly acquired site will make provision for the growth of the paper in the way of additional press room and also afford facilities for loading delivery wagons.

Guy Tombs has become manager of transportation of the Canadian Export Paper Co., Montreal, and allied interests and has entered upon his new duties. He has had a wide and thorough insight into all traffic matters and will bring to bear upon his new position

expert knowledge and efficient training. Mr. Tombs spent thirty years with the Canadian Northern Railway and for a long time has been assistant freight traffic manager in the East with headquarters in Montreal.

It is announced that the next great gathering of the International Stereotypers' and Electrotypers' Union will be held in Toronto in 1921. The convention was at Denver, Col., and a number from Toronto, Montreal and other cities were in attendance.

Many members of the National Editorial Association of the United States are meeting in Winnipeg this week and are touring the prairie provinces right through to British Columbia, and will return to Winnipeg via the southern part of the Rockies and Calgary. The editors are being tendered public receptions at numerous points and are being accompanied on their jaunt by a number of representative newspaper men from both the Eastern and Western portions of the Dominion.

A new geography will be issued next year by the Education Department of Ontario for use in the schools when the present contract will have expired. It is stated that map prices are now double those before the war.

A federal charter has been granted to the Leader Publishing Co., Limited, of Montreal, with a share capital of \$20,000 to carry on a general printing and publishing business.

The Ontario Government has recently sold several timber limits on the north shores of the Great Lakes and record prices have been received for the holdings. One berth brought \$22.50 per 1,000 feet on the stump, while several brought \$20 per 1,000 feet on the stump. There were a large number of bids.

Thorold is greatly in need of houses owing to the increasing number of employees in the pulp and paper mills in that busy town, and a special by-law has been passed by the council to prepare and file with the provincial treasurer debentures for \$50,000, the amount of the appropriation asked for by the local housing commission. The tax rate of Thorold has been fixed at 35 $\frac{1}{4}$  mills for the present year.

Thomas M. Stephenson died recently at his home in Toronto, aged sixty-nine years. He was a well known stationers' agent until sickness forced him to retire. He leaves a wife, four daughters and three sons.

A well fitted up and commodious club house will be available for the four hundred returned soldiers of Thorold and, in a recent drive of three days, over ten thousand dollars was collected for the object in hand. The Beaver Board Co., the Ontario Paper Co. and the Montrose Division of the Provincial Paper Mills Co. each gave \$500 toward the fund and the Foley-Rieger Pulp and Paper Co. \$200, while the merchants of the town raised over a \$1,000.

The Overseas Daily Record, the newspaper established in London, Eng., to provide Canadian soldiers with home news, will be discontinued as there are very few of the Canadian boys now left overseas.

Claude Sanagan, who for the past eight years has been identified with the Toronto Globe and latterly was in charge of publicity work and in editing the Retail Merchants Globe, has taken an important position in the publicity department of the Russell Motor Car Co., Toronto. Mr. Sanagan was presented with a silver ring on leaving the Globe.

Lieut.-Col. Wm. Simpson of Guelph, Ont., who had

command of the 16th Battery, and saw service in France, has returned home accompanied by his wife who did great work both in England and French hospitals. Lieut.-Col. Simpson, before enlisting, was for many years business manager of the "Guelph Herald."

The Maritime Paper Co., with headquarters in Moncton, N.B., has been granted a federal charter with a capital stock of \$100,000, to carry on a general paper business in all its varied activities.

The plant of the Beaver Board Co., at Thorold, Ont., has resumed operations after being shut down owing to labor troubles for some four weeks. The three tour system has been inaugurated and a working agreement entered into between the company and the men covering a period of six months. The men have been invited to form a Shop Committee to confer with the officials of the company at intervals in regard to conditions or other matters.

W. F. Christie, of the John Christie Co., Toronto, is spending his summer holidays at Trent Bridge, Ont.

"Belts," which is the publication issued by the Federal Engineering Co. of Toronto, will be increased in size and improved in contents and henceforth will be printed bi-monthly instead of monthly.

E. F. Beaupre, who for many years has been advertising manager of the E. Eaton Co., Toronto, has resigned and is spending a holiday in Quebec. It is understood that he will go with the John Wanamaker store in New York city in the near future.

#### THILMANY P. & P. CO. BUILD HOUSES.

The housing problem, one of the most perplexing facing the laborers in the United States at the present time, need not trouble the employees of the Thilmany Pulp and Paper Company of Kaukauna, Wis., to any great extent if they care to avail themselves of the plan devised by the company management to aid them in acquiring through a group purchasing arrangement, the property for their homes and the building material needed to erect them. The company desires its employees to group together for the purchase of material, and it intends to act as purchasing agent for them so that the material can be obtained as cheaply as possible. A building and loan association has been organized to assist in financing the building. Twenty-five homes will be constructed at Neenah immediately by the Neenah Building Company, which was recently organized and incorporated for \$100,000.

#### SAW MILL DESTROYED AT WOODLAND, ME.

St. John, N.B., July 21.—The sawmill and pulp mill at Woodland, Maine, with a large quantity of lumber, was destroyed by fire this afternoon. The loss amounted to nearly \$300,000. In this town is also the mill of the St. Croix Paper Co.

#### PREDICTS PAPER MILLS IN PHILIPPINES

The Philippines are in a position not only to supply newsprint for domestic needs, but to export large quantities of this product. According to a report recently made by the director of the bureau of forestry, the raw materials available, such as the bamboo and two kinds of grasses, the cogon and the talahib, are of such good quality and can be so cheaply obtained that if careful study is given this industry the islands will not need to import annually \$2,000,000 worth of paper, as heretofore.



### CANADIAN TRADE CONDITIONS.

Toronto, July 28.—Business in the paper line continues good and all mills report trade as satisfactory. There is a tendency on the part of several jobbers to place large orders in anticipation of prices going higher after the summer holidays and the resumption of fall demands. In order to safeguard themselves against sudden advances in the cost of production and as showing that the trend of prices is upwards, one of the largest firms making book, writing and bond papers is now attaching the following to each order: "Owing to the oversold condition of our product and uncertainty of costs, it is necessary for us to protect ourselves against being sold up too far into the future. We, therefore, can only accept this order subject to any advance of the prices on or before date of shipment and with the understanding that you will not demand shipment in excess of your maximum, average monthly tonnage."

Another important change is in coated stock, an advance of half a cent having gone into effect during the past week while all quotations are now made, f.o.b. mill, instead of delivered. This will mean considerable increase in the cost of coated paper, but the plants have been busy and have all the orders they can attend to. There has been a rise in the figure for raw stock and it has been known for some time that the coated line was bound to ascend. One coated paper plant is operating only five days a week during the summer months and is giving its employees a full Saturday holiday with no reduction in pay while all hands, who have been in the service five years, are granted a week's holidays, and those who have seen ten years service or over, are conceded two weeks vacation with full pay.

Toilet and tissue plants are very busy and are refusing orders in some instances while export trade will not be catered to the same extent as formerly due to increasing domestic requisitions. Prices are holding firm. The demand for sulphite paper for waxing purposes in wrapping bread and other lines has sprung up sharply during the past few weeks, and wax paper factories are rushed, while a number of them are doing an export trade.

Jobbers report business as good in spite of the very warm weather and the interjection of many holidays, such as Peace Day, Civic Holiday and others. Deliveries are very fair and things are moving along quite encouragingly, with prices on all lines holding firm and a good outlook for fall requisitions.

One leading firm has sent out notices to the effect that the paper market has gained much strength during the last few weeks, both in Canada and the United States, and is now strong and daily growing more active. The market on raw materials is firm and other manufacturing costs have a decidedly upward tendency.

There is a big demand for newsprint and every indication that prices are going to go higher during the fall. The increased consumption is not being met by the augmented production and stocks are getting lower all the while. The demand for sulphite pulp continues good and there is a very fair requisition for mechanical pulp, with prices holding steady in every ease.

Owing to the advancing cotton market, higher wages, shorter hours of labor, etc., there is an advance in the price of hard finished cotton twines. Latest advices are that everything tending to still higher values and in order to induce present buying, certain English firms state that, in the unlikely event of a reduction taking place customers will be accorded the advantage of it. The same applies to Canadian cotton twines as manufacturers have recently posted a new quotation list, with the difference that the local firms do not guarantee prices against a drop, and list are subject to change without notice. Conditions are so abnormal and unsettled that orders are accepted on the basis of prices in force when received at the office.

The attention of the Canadian paper trade is being much directed toward export and there is as yet very little improvement in shipping facilities. There is a gradual whittling down of government control of the tonnage, but much disappointment that the process is not faster. The paper situation is being watched with interest in Great Britain and there may not be as great a demand for newsprint in the Old Land during the next few months as was anticipated. The three tour

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for

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Bleached and Unbleached of  
Canadian manufacture.  
Write and let us show you  
what we can do.

system which has just been instituted, will tend to narrow British production and to overtake normal requirements while the prospect of a merger of all the British mills, the scrapping of obsolete outfits and adding new machinery to those plants which require it, is being viewed with eager concern. If such a consolidation goes through it is learned that it will in no wise affect the British demand for groundwood pulp from Canada. However, in the eventuality of the amalgamation of British newsprint enterprise, it is not likely that the Canadian manufacturers will suffer in the long run to any great extent, for conditions could be speedily readjusted and there are excellent openings in Japan, Australia, South America, the Orient, South Africa and other countries. The paper mills in Canada are in most cases working under favorable conditions. This is shown by the sharp advances of late in the price of listed stocks. Any offerings of new securities that have been placed on the market have been speedily subscribed for and in not a few instances the books have been closed before the allotted time. It is now thought that the worst of labor troubles and industrial unrest are pretty well over and things will settle down to a normal, progressive basis. There is no hope that prices will recede in any line, while it is difficult to state what the fall months will bring forth. It is announced that one Canadian company, which some time ago suspended the payment of dividends, will shortly resume the payment of same while another large organization which, for a number of years was in a bad way financially, is now getting out of the woods and will in the near future clear up all its back indebtedness.

Paper box factories are busy and so are envelope plants and manufacturers of fine stationery and paperies. The tendency of values in paper stocks has been upwards and a fair business is being done. The number of new companies in the pulp and paper line as well as the publishing ranks, which are being organized every week is an encouraging sign of the future and all advertising agencies report that the outlook for large campaigns of fall publicity are bright. The daily newspapers as well as the trade press are carrying much heavier consignments of advertising than they were a year ago, while special editions, which are straws, showing which way the industrial wind is blowing, have evidenced a gratifying gain. New publications are being launched on all sides and staffs are being increased. There is evidently prosperity ahead for pulp mills, and business in all avenues, in spite of a number of troubles in the transportation, shipping labor and distribution lines. Conditions are becoming more settled each week and extensions to plants are being made and the future viewed with confidence and optimism.

Book publishers report a great demand for new fiction and booksellers are placing large orders. Much post-war literature is being issued and new school books will shortly be placed on the curriculum of the schools, all of which tends to increase the consumption of paper. New industries are springing up in big towns and cities, which will add to the general demand for paper, while big concerns, particularly automobiles and auto supply houses, are doing more advertising than ever. Other national advertisers are turning to the field and mediums are carrying more advertised matter than at any period since the beginning of the war.

### AMERICAN MILL MAKES NEW PRICES.

The Racquette River Paper Co., Potsdam, N.Y., has sent out the following communication, which is somewhat of a gauge on prices of wrappings:

All previous price lists and quotations are withdrawn and the following list is effective to-day on current business only and subject to change without notice, all orders offered being subject to mill's acceptance.

No. 1 F Manila—35 lbs. and heavier.....	5 <sup>1</sup> / <sub>2</sub> e
No. 1 F Manila—30 lbs.....	5 <sup>1</sup> / <sub>2</sub> e
Double Star Manila—35 lbs. and heavier.....	5 <sup>1</sup> / <sub>2</sub> e
Double Star Manila—30 lbs.....	5 <sup>3</sup> / <sub>4</sub> e
Envelope Manila—35 lbs. and heavier.....	5 <sup>1</sup> / <sub>2</sub> e
Keystone Fibre—50 lbs. and heavier.....	5 <sup>1</sup> / <sub>2</sub> e
White Magic Fibre—50 lbs. and heavier.....	5 <sup>1</sup> / <sub>2</sub> e
Butchers Brite—50 lbs., W. F. Butchers.....	5e
Doeskin—50 lbs.....	4 <sup>3</sup> / <sub>4</sub> e
Ivory Fibre—50 lbs.....	4 <sup>1</sup> / <sub>2</sub> e
Liberty—40 lbs., D. F. Butchers.....	4 <sup>3</sup> / <sub>4</sub> e
Prince George—40 lbs., D. F. Butchers.....	5 <sup>1</sup> / <sub>2</sub> e
D. F. Fibre—30 lbs.....	6e
D. F. Fibre—25 lbs.....	6 <sup>1</sup> / <sub>2</sub> e
D. F. Sulphite—30 lbs.....	6 <sup>1</sup> / <sub>4</sub> e
D. F. Sulphite—25 lbs.....	6 <sup>3</sup> / <sub>4</sub> e
S. Kraft—30 lbs. and heavier.....	6 <sup>1</sup> / <sub>2</sub> e
Parchmentine—30 lbs.....	6 <sup>3</sup> / <sub>4</sub> e
Parchmentine—27 lbs.....	7e
Parchmentine—25 lbs.....	7 <sup>1</sup> / <sub>2</sub> e
Screenings—Quoted on application.	

These prices are F. O. B. Mill, based on rolls with 1<sup>1</sup>/<sub>2</sub>e extra for sheets 150 sq. inches and larger.

### SERIOUS SITUATION IN SCANDINAVIA.

London.—The English import prohibition on paper for the protection of the English paper factories has involved Norwegian paper factories in a very difficult situation. A number of paper mills on the Drammen Falls have been obliged to close down either partially or altogether. The mills at Kalfos are closed. At two other mills the output is down by half; at a third mill work will be stopped in a week's time. The Union Company is also considering the question of restrictions on a large scale, and its example will doubtless be followed by other firms, unless England is willing to make some concessions in the regulations.

The price of paper has fallen somewhat since the armistice, chiefly owing to American competition, but there is not likely to be any further reduction in the near future. The market is dull as regards cellulose, owing to competition in Sweden where there has been over-production. The wood-pulp market, on the other hand, is steady and likely to continue so, as there is a great demand from the English paper mills.

The Swedish cellulose factories are placed in a particularly difficult position owing to the decrease in sale, especially on the English market. The main reason is that the Swedish paper factories have put on the English market paper for newspapers at a much lower price than for the raw goods offered to England. To protect themselves against Swedish competition in the paper market, England will have to introduce a protective duty of 25 per cent on paper. The Swedish sulphate market is as good as extinct and there is a very poor sale for sulphite. The position of the Swedish paper industry grows steadily worse.



# WOOD PULP TRADING CO., Ltd.

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Buy Pulp and Paper for Export  
Quotations Solicited.

### CONSERVING RAW MATERIALS.

In a recent bulletin on the business outlook, Green-shields & Co., says:

The campaign on the part of certain American interests to bring about a lifting of the embargo on the export of pulpwood, cut upon the Crown lands of the Province of Quebec, may have a reactionary effect not anticipated by those behind the campaign. It has served, for instance, to draw public attention to the fact that the available supply of commercially accessible wood in the province is fast diminishing, and that unless some large plan of reforestation is speedily put into effect there will be a very real danger of the pulp and paper manufacturing industry of the province being confronted some years hence with an actual shortage of raw material.

So far from there being any likelihood of the Government of the Province yielding to pressure to lift the embargo on exports of pulpwood, it would be logical to believe that the larger measure of public attention drawn to the pulpwood situation might result in an extension of the embargo to cover the export of wood from the freehold as well as from the Crown lands.

Objections to such a course suggest themselves in the dependence of Canada on American supplies of such commodities as anthracite coal. If the Dominion, in the interests of the conservation of raw materials, adopted a policy of forbidding the export of all pulpwood the United States might adopt a similar policy with respect to anthracite coal. At the same time even an extreme measure of the sort could be justified by the necessities of the situation, if urgent, and that there is a certain element of urgency is indicated by a summary of the situation recently made by the Canadian Pulp and Paper Association. "Not only is the supply of pulpwood," says a bulletin of the Association, "being used up as a result of ordinary consumption, but also by reason of tremendous destruction caused by fires, insects and fungi. Only recently it has been discovered that the ravages of the bndworm, a small, brownish caterpillar which breeds in millions and feeds upon the foliage of spruce, balsam and hemlock, have practically wiped out all the balsam in this province and occasioned serious injury to the spruce, hemlock and other tree species."

A middle course by which the policy of the embargo on the export of pulpwood from Crown lands only will be continued on the one hand and on the other a plan of reforestation on a large scale will be undertaken by the Government authorities will probably prove the most satisfactory in the long run. Since the existing embargo was put into effect, the investment in the pulp and paper industry of Canada has grown from \$23,104,560 in 1910 to \$186,274,905 in 1918. Exports of pulp and paper products in the same period rose from about \$8,500,000 to \$71,755,325. No Canadian industry has a record of such rapid and sound growth, with much of it due to the restrictions with respect to the export of wood out on Crown lands. These at once gave courage to Canadian investment in pulp and paper-making mills and stimulated the investment of American capital in similar plants on Canadian soil. No sound reason can be advanced why, to meet the wishes of a few American holders of Crown land leases, the present policy should be modified in any particular.

Not that the theory, once held in authoritative circles, that Canada's spruce forests were self-replenishing and that the supplies of woodpulp were in-

exhaustible, has been abandoned, important developments are taking place with a view to instituting a national scheme of reforestation. A few of the larger companies have made individual efforts along this line, but a broader policy will be required to meet a situation of such importance to the province as a whole. An industry that contributes about \$1,800,000 a year to Provincial revenues, apart from ordinary taxation, merits encouragement. The authorities of the province, in such undertakings as La Loutre Dam on the St. Maurice River, which has given added life and vigor to the important hydro-electric developments of the province, have displayed vision and good judgment in encouraging and protecting private industry.

### EVERYONE SHOULD BE A BIRD MAN.

"Do you know that if all our birds were destroyed, in three years this continent would be without life? The insects would first eat all vegetable life and then eat us," said Chas. P. Shoffner in a public address delivered recently. "Do you know that insects cause a loss of more than \$1,200,000,000 every year to the farmers, truck-raisers, and fruit-growers of the United States? Whatever affects the producer affects every consumer in the country. You know what will happen if this keeps up much longer: We will all have to go to work. Do you know that the farmers of the East pay more than \$15,000,000 a year for materials to kill the potato bugs? Who pays that? We do—and it is getting so I lift my hat every time I see a potato. Do you know that the cotton boll-weevil causes a yearly loss to the Texas cotton-growers of \$50,000,000? Do you know that the apple-producing States pay more than \$2,000,000 a year for spraying trees to keep down the San Jose scale-louse and the codling moth? Do you know that many species of caterpillars eat twice their weight in leaves daily? Do you know that a certain flesh-eating larva consumes in twenty-four hours 200 times its original weight? Have you an idea of the reproducing capacity of insects? Do you know that the offspring of one pair of potato bugs, if allowed to increase without molestation, would in one year number more than 60,000,000? Do you know that one pair of the hop-vine aphid is capable of producing through the thirteen generations of the species in one year ten sextillions of individuals? Do you know that the unrestricted increase of one pair of the gipsy-moths would in eight years devour all the foliage in the United States? Talk of your Rooseveltian families! If ever birth-control is needed, here is a real honest-to-goodness job.

"I do not know why insects were created, but I do know why the birds were created. It was to keep in check the insects, the pests, and they can do it. In our brilliant career as Americans, and with a strong hold on the thought that the Lord will provide, we have killed just about 90 per cent. of our birds. Is it any wonder that the ten per cent. can not keep down the pests? Insects have appetites, but let me tell you about the birds.

"A quail taken in Texas had 127 cotton boll-weevils in its craw. Another taken in Pennsylvania had 101 potato bugs.

"A tree-swallow's stomach contained forty entire chinch-bugs. Two stomachs of pine-siskins contained 1,900 black olive-scales and 300 plant-lice. A night-hawk had eaten 340 grasshoppers, fifty-two bugs, three beetles and two wasps. Fifty-one species of birds eat hairy caterpillars, and thirty-eight species

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## WOOD PULP AGENTS.

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feed on plant life. Put this in your memory-box. If in the State of Pennsylvania there were but one pair of robins to the acre, and but three young in the nest of each pair, this one variety of birds would eat 3,600 tons of insects every day during the breeding season. In Massachusetts, Reed estimates the birds eat daily 21,000 bushels of insects. What if they were all turned loose?

"Yes, my beloved, I know the robins eat your cherries. You've destroyed all their natural supply of wild fruit. The birds are fruit-hungry and must have something. Why not cherries? You buy gasoline for your buzz wagon and growl because the birds have taken your cherries. Haven't they worked for them? I'll tell you what to do if the birds take your cherries—plant another tree.

"Help educate fifty-one per cent. of the people of the United States to the true value of bird life and it will not be necessary to spend thousands of dollars to pass bird laws that are not kept. When we get the majority to believe in the birds, the birds will be protected."

And only the Lord knows how much damage to forests is prevented by birds. Here is for every one to help a good cause. The birds you protect now may be eating bugs next year from the trees that feed your mill.

Men whose work can bring up the average production of a concern are in big demand.

We live and learn, but those who live the fastest don't always learn the most.

### SPANISH RIVER MADE A PROFIT.

Shareholders of the Spanish River Pulp & Paper Company are on the eve of coming into their own.

The arrangements in connection with the refinancing of the company have developed to such an extent that an official announcement will soon be made. The results it is stated should prove highly satisfactory to the holders of the company's various securities.

Coincident with the conclusion of the new financial arrangements it is likely that an announcement will also be made to the effect that two or three well known Montrealers will be added to the directorate of the company.

Equally important with the new financing program is the fact that the figures of earnings for the year ended June 30th, 1919, after the usual deductions, and allowing for dividends on the preferred stock at the rate of 7 per cent per annum will show between 13 and 15 per cent on the common stock.

### BELA KUN SHY OF PAPER.

Vienna, Wednesday, July 16.—(By the Associated Press.)—Bela Kun's stock of print paper is dwindling, thus limiting his bill-board campaign asking for confidence, and interfering with the output of new money. The bride of Tibor Szamuely, who is the daughter of a prominent lawyer named Gosztony, has been appointed directress of money presses. The lack of paper has caused a discontinuance of the new issue of communist postage stamps. The few original thousands of these stamps have been taken up by stamp collectors.

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OF CANADA

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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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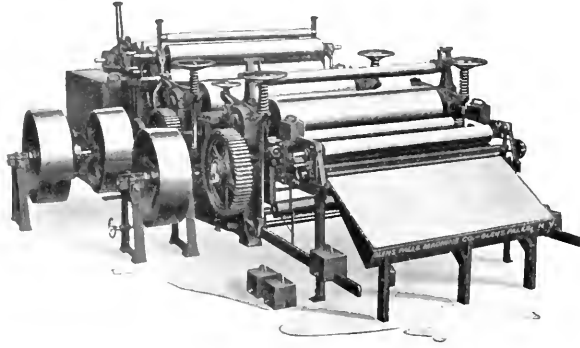
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# The Rogers Wet Machine



This Rogers Double Wet Machine has a capacity of 30 dry tons in 24 hours.

It automatically cuts the pulp into sheets 48 per cent dry.

In operation it saves labor and power and its product is handled at a saving of labor and expense.

**Grinding Wheels**

**Beaters**

**Motors**

**Slitters**

**Winders**

**Felts**

**Pulp Stone Burrs**

**Sprockets and Attachments**

**Stock Pumps**

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**Chippers**

**Crushers**

**Rotary Screens**

**Link Belt Conveyor Chain**

**Valves**

## The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO,  
HAMILTON, WINDSOR, WINNIPEG, SASKATOON,  
CALGARY, VANCOUVER, VICTORIA.

# EDITORIAL

## A CORNER IN PAPER MILLS.

Mr. Becker apparently meant what he said in regard to putting paper mills under the shadow of the press room. There will always be a difference of opinion on this point among manufacturers because local conditions, transportation facilities and the location of sources of supply are such variable factors. What is raw material for one mill is finished product for another, which in turn requires entirely different raw materials and news, sulphite and ground wood mills all have different requirements for power and steam.

It is quite to be expected that the ground wood mill is best situated where wood and water power are abundant and cheap. No raw material need be brought in except ordinary mill supplies, unless coal is required for supplementary power and heating. The sulphite pulp mill is different to a degree. Less power is required, but more steam. Therefore, in most plants, coal, as well as sulphur and lime or limestone must be brought to the mill. Yet even here the principal material is wood, and this is best obtained at the doorway of the forest. Taking wood to a distant mill means transporting as much waste as the pulp produced. Most mills in Canada are, or could be, very convenient to limestone, so that transportation of coal and sulphur is preferable to hauling the wood to the coal. That is probably why England imports sulphite, as she certainly has an abundance of limestone and coal. Another factor there, of course, is the disposal of the effluents.

The paper mill furnishes the bone of contention. An out-and-out decision is impossible because some cases favor one location and others, another. It does seem to us, with pulp and power conditions as they are, and with the marked advance in electric drives for paper machines and the possibility of even drying by electricity, that the place for the newsprint mill is where the pulp is produced. The advantage of using fresh ground pulp and handling both kinds of fibres in slush form is alone almost enough to turn the scale. Mills near the consumer are of course a sort of emergency insurance, but they are dependent on as many variable factors, if not more, than the complete mill. There should be no occasion for worry on the part of Canadian newsprint mills that their market in England will be smothered in English made newsprint, even if the Dominion is favored with the opportunity to supply the pulp. If the big consolidation scheme goes through, we may expect to see most of the eastern ground wood and sulphite mills coming under English control.

## TIME TO ACT.

The sentiment voiced at the summer meeting of the Technical Section that it is time something besides talking were done in the matter of the true conservation of our forests will be widely approved. In bringing up the subject at this meeting we are sure that Mr. Carruthers had no intention of disparaging the sincere efforts that are being made in certain quarters along this line, for he appreciates the hard work that is being done by many friends of the forest. The point is rather that the effort is too circumscribed and the interest in, and intelligent consideration of, the problem by the common people and their political representatives so sadly limited.

There is probably no cure-all for the condition of our forests today, but the treatment they are getting just now is certainly the "kill or cure" variety, with the emphasis almost entirely on the kill. Quebec is looked up to by most people, and properly so, we think, as having as carefully planned and far-sighted a forest policy as will be found in any province or state on the continent. Yet Quebec's policy is far from complete. Ontario looks with alarm on the large proportion of her wood-cut which is exported to support mills across the line. Quebec has placed an embargo on wood cut on Crown lands, so the ratio of export to domestic used wood is different, but even this step **does not get** at the root of the matter.

Cutting trees is not damage, but help to the forest if done correctly, just as harvesting grain is not bad for the field, and neither crop gains anything by being left after it is mature. So it is not what is done with the wood after cutting, but rather the method of logging that holds the great menace to the future of our forest wealth. The forest is so intimately bound up with almost every phase of the welfare of the Canadian people that forest conservation can not be considered as a thing apart. This may have been in Mr. Carruthers' mind when suggesting that educationalists be included in a meeting of interested parties to formulate a program of **action** that could be carried out. It is safe to say that no program will be carried out that does not have the support of public opinion, and public opinion is either a result of education or a crystallization of prejudice. Therefore the education of the public to the importance of the forestry situation and the need for immediate action is one of the very necessary steps. Here is work for the Press of Canada with possibilities for unlimited good to the future of the country. We are inclined to believe the demand of the organized publishers of our newspapers would hardly be denied by any government in Canada, but to be effec-

be intelligent. When the forest goes, the great mills go also, and away goes a large proportion of our population and wealth, for the forest land, when stripped, will raise nothing else but floods. Then it will be necessary to import paper from Russia and India—and pay for it—at a price not restricted by the Government decree.

If public opinion and Ministers of the government are to be instructed, what shall they be taught, and who will teach them? We have said that the disposition of wood that is cut has no effect on the forest that is left, and preventing the cutting of a forest is not always the best way to conserve it. It is ridiculous to prohibit the cutting of a fine piece of timber for export that happens to be on Crown land and permit the private owner of the neighboring land or the Canadian holder of an adjoining limit to cut as he pleases and leave a gilt-edged invitation for a fire to come in and wipe out the whole business. An instance of this very thing happened in New Brunswick only a few weeks ago. Slash was left on private land, right up to the line of Crown timber. A fire started. Many said it was impossible to stop it, and they were nearly right. But the district fire warden was a man of will and action and he had a Johnson pump. In a very short time his equipment was aboard the express and carried by men to the scene of the fire. Something like 1,500 feet of hose was required to reach the blaze, and only after a heart-breaking fight was the fire under control. Life is too short to strain men's nerves like that or to torture them with the menace of a horrible death—which all too often comes—when the forest fire approaches with its awful snoko and terrible swiftness. This danger can be greatly reduced, if not eliminated, by action. It is a crime and a disgrace to our land that these catastrophes happen so often. We are no less than murderers if we fail to act in the matter, besides being thieves of future generations if we selfishly refuse to spend a few dollars to protect their inheritance.

*Slash Must be Disposed.* I had one experience in getting away from a very small fire through a mass of slash and can appreciate the almost certain impossibility of making an effective fight, or successful flight, under bad conditions. The problem is a many-sided one, and must be worked out carefully, but something must be *done*, in this and other lines of forest conservation, and promptly.

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#### SPEAK UP.

The remark is frequently made that the best part of a technical meeting is the discussion of papers and reports. Some of the very people who hold this view have often been observed to sit through a session and apparently use no other organ but their ears. Sometimes they are moved to make a statement or address a question to a neighbor. An unfortunately large number of our meetings either without ideas, or without opportunity to express them. They seem to content themselves entirely relieved of responsibility when

a committee has been appointed to work on a problem and then there is nothing more for them to do but sit down and let the committee work, then come to the next meeting and listen in silence to the report.

It is true that some of these silent ones give valuable assistance on or to such committees by actual work or by suggestions. No committee, however able and industrious, can completely cover a subject. They can not know every phase of a problem. The general meeting is the place where they present the results of their efforts and where they should rightly expect to have their work supplemented by the experience of other members. If any member of the Technical Section can say he has not done any work during the time between meetings on problems under consideration by regular or special committees or has no personal interest in such work, he is a mighty poor member, and is not doing his share in the interest of the industry and his employer. This applies also to the topics discussed in papers read at the meetings. A man without ideas is dead. If he has ideas and will not share them, but simply strives to soak up more, he is a sponge. He ought to be stepped on, in a friendly way, and that is what this little note is for. We don't want to hurt anybody's feeling, but we do want to see a more lively interest and participation in the discussions at our meetings.

---

#### CORWEBBS.

The man who was so mean he would skin a flea for its hide isn't in it with the packers, who not only skin the flea, but the public, who can't.

Direct steamer connections between Montreal and Havre will be a great advantage to shippers of pulp, paper and machinery. France offers many opportunities as a market for Canadian goods to the advantage of both buyer and seller. In dealing with the mother country of nearly half of our population, the best possible terms should be extended.

There are two kinds of profiteers, the one who "works" the public and the one who won't work at all. The former takes an unfair advantage of his position to manipulate prices, so as to give him an unnecessarily large profit and the latter, by refusing to produce his share of the world's need of goods contributes to the shortage which is largely responsible for high prices. And there is also the man who refuses to work, except at such an unduly high wage that the public cannot afford to pay the extra cost of the goods or service to which his labor contributes.

---

That Belgian police dog that jumped a 14 foot fence could almost reach a beef steak.

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When Benjamin Franklin started a newspaper in Philadelphia he was warned that it would fail because, his friends told him, the field was overcrowded. There were already two newspapers in America!



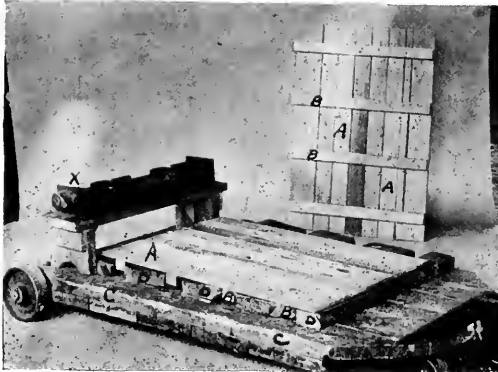
# The Baling of Sheet News for Export\*

By G. MEERBERGEN,  
Belgo-Canadian Pulp & Paper Co.

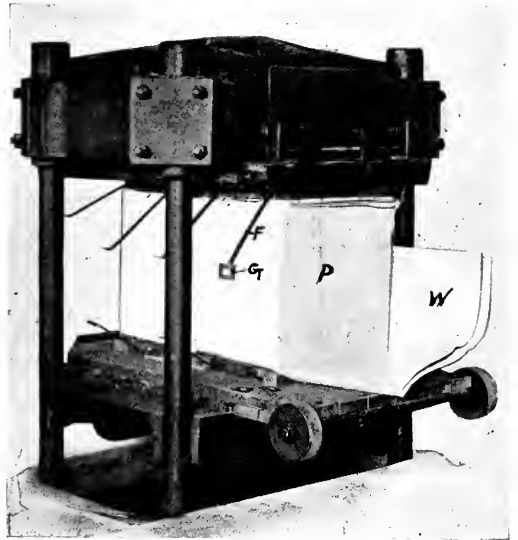
Since war cut out some of our competitors in the Central and South American Fields, the question of exporting newsprint from Canada to points in the above-named countries has come to the fore.

In considering the exportation of newspaper, it must be borne in mind that transportation facilities in the

With the exception of a few railways connecting some of the larger towns, the old-fashioned mail stage and other antiquated means of conveyances are yet the only means of transportation. Amongst other conditions affecting particularly the export trade is the size of the newspaper published in small towns, and practic-



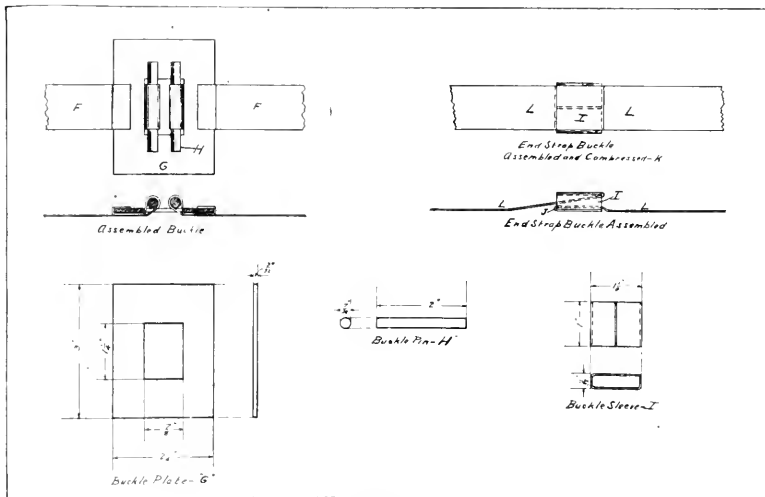
1—Truck used in pressing bales, also cover and 3 boards used to allow passing of iron bands. On end of truck is machine used to tighten up cross iron bands.



2.—Photograph showing bale being pressed, part of wrapper removed to show how bands are passed. Also shows eyelets and buckle.

countries south of our great neighbor are still in a primitive state, due to small population and great areas.

\*Read at the summer meeting of the Technical Section, Canadian Pulp and Paper Association, on board Canadian Steamship Lines Steamer "Murray Bay," July 29, 1919.

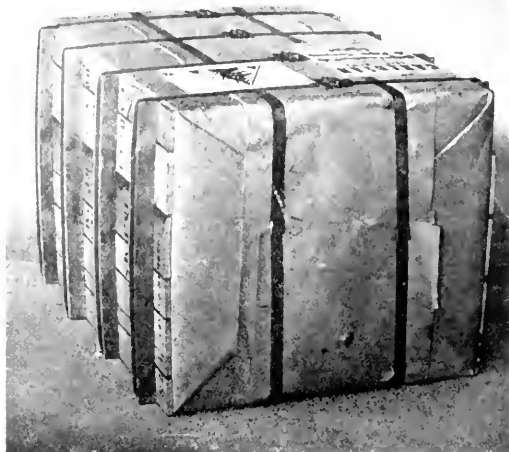


Sketch showing details of buckles.

ally operations are small, i.e., too small to have a news-  
print mill and a rotary press on which rolls can be  
used.

Even so, the question of sheet news is of utmost im-  
portance. There is a market for Canadian mills in those coun-  
tries, and with the modern equipment of our mills,  
backed by the best raw materials and technical men, we  
can compete with any country in this field as to quality  
and service.

Paper for export to such points is generally shipped  
in cars from mills to seaboard, either New York or St.  
John, loaded in coastwise vessels, and thence conveyed  
to seaports in South America. So far the handling of  
the paper does not differ from that for paper made for  
exportation to the old Continent, but for the South  
American trade the trouble only starts at the seaport  
when the goods are disembarked.



4.—Top view of bale showing protective sheets over ends and edges, and method of fastening cross bands.

news shipped to seaports in South America or places near these ports, necessitating only one or two hand-  
lings.

It has been the habit in the past that the "sheet news" shipped to such destinations was to be packed "interlapped, 2 reams to the bundle" and covered with two plies of ordinary mill wrapper. The sides of the



3.—Side view of bale showing buckle pin arrangement, extra iron bands and wrapper strip—(strips of wrapper protecting edge of paper where iron cross bands press on edges are under the wrapper strip.)

The paper must now reach some of the small towns either on railways to destination, or to a certain point from which rigs can handle it to yet smaller towns than the railway centres and accessible by half decent roads. Sometimes then another stretch is to be covered by the paper to reach the final destination and there, over rough mountain paths, the only means of conveyance is the old mule, which, by the way, rendered such valuable services during the war.

All these difficult transportation problems have rendered it imperative for the mills to pack their products in such a way as to stand the handling to the location where the customer requires them, and export bales go to be resorted to.

Before, however, tackling the question of Export Bales, a few words might be in order in regard to sheet



5. Photo of export bale ready for shipment, shows straps, marking, and C. P. & P. A. label.

package were covered with a burlap strip to prevent the wrapper from tearing at the edge and damaging the paper, in some instances customers have ordered their paper to be packed 3 reams to the bundle interlapped and even 3 or 4 reams flat. The latter method of pack-

however, newsprint being standardised as to weight, etc., it is of great necessity that the shipments are according to sample, and that the goods arrive at destination in good condition.

Not long ago an article appeared in this magazine from a New York firm exporting paper in bales and complaining about the condition of the bales upon their arrival at New York. The firm stated that the paper was packed in bales, but that the bales were not pressed; that the iron bands had fallen off the bales, and that the covers were only held in place by some extra rope which the manufacturer had had the precaution to tie around the bales as a safety measure.

In order to pack up paper for export, paper should be laid flat on packing boards and each ream separated by colored strips. The paper should then be pressed in hydraulic presses and the wrapper which will protect it from dirt and dust neatly folded around the paper prior to tightening the iron straps. The pressure should then be released and a solid compact bale, that will stand rough usage, will be turned out. It is evident that only in a case where waterproofing wrapper is used that a bale will stand inclement weather.

We will now proceed with the specification of the different materials used in making up a bale of paper and a detailed statement of how the paper is handled after it leaves the cutter.

Packing boards are made ordinarily of spruce or pine lumber  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch thick,  $\frac{1}{4}$  inch larger than the size of the sheet to be packed. These  $\frac{1}{2}$  inch or  $\frac{3}{4}$



6—Front view of bale packed with burlap, no cross bands are needed.

ing has not met with success and the second one had no repeat orders.

However, since the war sent prices for burlap soaring and even eliminated practically this product from our market, the mills had to find means to substitute the extra protection. To this effect an extra band of wrapper was put inside of the bundle, giving adequate protection and a wrapping board more pliable than previously used and having better qualities was resorted to with success and will probably definitely eliminate the jute from export bundles.

#### EXPORT BALES:

These bales might be sub-divided into the following:

1. Bales weighing over 500 lbs.
2. Bales weighing over 200 lbs.
3. Bales weighing under 200 lbs.

Bales belonging to the first class will find their way to railway centres in most of the South and Central American Republics. Bales belonging to the second class will reach points readily accessible by motor trucks or rigs, while bales belonging to the last class will have to find their destination carried on horse or mule back.

Considering the above, it is of the utmost importance that paper be packed in strong iron strapped bales, that will stand up against the rough usage of the trip.

Another point to be considered is the fact that we must aim to give the customer what he wants, if we want to capture this market from the Europeans. It has been the habit of the overseas manufacturers to send their travelers right into the country where the goods were to be used, to study conditions and adapt their wares to the requirements of the buyers. In this case,



7.—Side view of bales packed with burlap.

inch boards, denoted on Figure 1 with the letter "A," placed on the side that faces the paper, are joined by cross slats 2 inches wide and  $1\frac{1}{2}$  inch. thick, letter "B" on Fig. 1; it is on these slats that the iron bands or straps will come, that really will make the package an export bale.

boards are laid on small low trucks and pressed in the press. In order to allow the passage of steam after the bales are under pressure in the press, packing boards "D," that fit in between the trucks are placed between the truck and the packing boards.

On top of the packing board a sheet of mill wrapper, "W," Fig. 2, is spread to protect the paper from coming into contact with the boards and to prevent dirt and dust from reaching the paper.



8.—Small bales ready for shipment. These bales are made for transportation on mule or horseback.

Figure 9 is on page 453.

On this wrapper the newspaper "P" is then spread, flush with the edges of the board and reams separated with colored strips. In some cases, customers have requested that each ream be wrapped up, which is ordinarily done by using 36 or 40 lbs. newsprint.

After the required number of reams are piled on the board another wrapper is spread over the pile of paper, then packing boards and 3-inch boards are laid on top of it and the package is ready for the press.

The press is generally of the hydraulic type working under a pressure of about 500 lbs. to the square inch. In pressing paper, care should be taken not to press it too much, allowing for expansion of bale and not losing sight of the fact that the iron bands might break when pressure is released. After the paper has been sufficiently pressed, the wrapper which was spread over and under the paper is neatly folded, and an extra strip of mill wrapper, which strip is the full width of the bale, is put around the bale to give extra protection to the sides.

The iron bands "F" are now passed through the spaces left on top and bottom of the bale and at "P" end securely fastened by buckles "G" and pins.

In order to give the reader the benefit of the way the buckles and pins are used, we will stop a moment to explain.

The bands "F" are generally received as "hoop iron" 1 inch wide, 19 Imperial gauge. The hoop iron is

cut into suitable lengths and each end of these lengths is formed to an eyelet shape. The buckles "G" are made of steel plate 3/32 inch thick, cut by an automatic machine and will eventually hold the two eyelets of the band. For dimensions of buckles "G" see sketch.

In order to hold the eyelets of the bands in the buckle small pins "H" about 1/4 inch diameter and 2 inches long are passed through the eyelets so as to cover both sides of the buckle. After these pins are in place the pressure on the bale is released. The bands tighten and pins and buckles hold the bands in place.

In order to hold the strip of wrapper, which covers the side of the bale, in place, iron bands L, Fig. 3, duly fixed on the ones used for making the bales, are passed along in such a way as to be held in place by the pressure of the other bands and fastened by buckles, as shown in sketch at "I."

These bands are generally put in place before the pressure of the bales is completely released. In order to tighten these extra bands "L" a small machine, "X," operated by hand, is used, photo of which is shown on the end of truck in Fig. 1. From small pieces of hoop iron, buckles are made in folding the iron over as shown in sketch.

After the band has been drawn tight, not overlooking the fact that four folds of wrapper must be placed at the edges of the bale, where these bands come in contact with the wrapper, and on which they exert quite a pressure, the buckle which has been fastened over as in "J" is passed over the other end of the band, duly bent over to prevent it from becoming loose (see "K") and the bale is ready to be marked.

The marking, owing to the regulations governing imports of paper in the South and Central American Republics, is of great importance, also the Southern country customers require, as a rule, in addition to the size in inches, number of reams and marks, also the size in centimeters and the outside dimensions of the bale in centimeters. The gross, tare, and net weight in kilograms is to be stencilled on the bales. Some seal manufacturers have actually put on the market scales with duplex dials giving at the same time the pounds and kilograms, thus facilitating the work of the shipping clerk.

It might be in place to mention here that bales pressed as explained above will measure between 53 and 56 cubic feet to the ton.

I also wish to add that, before the war, hurlap was used protecting the bale. This hurlap was sewn by hand on the sides of the bale and placed between the packing board and the wrapper before the paper was pressed. This hurlap did away with the iron straps now used to hold the extra strip of mill wrapper in place around the sides of the bale and not protected by the packing board, also of the strip of wrapper itself.

In concluding this article, I wish once more to emphasize the great importance of a proper packing of the paper to be exported to South America.

A bale which reaches the customer in a good condition, neatly packed, is the best advertisement for the Canadian manufacturer.

The Marathon Paper Mills Co. use a long handled wire cutter for cutting the binding wires on ears of pulp wood logs. It is a powerful cutting tool, operated by a rod and lever on the long wooden handle, similar to the tool commonly used for pruning trees.

# Utilization of Waste Sulphite Liquor

By BJARNE JOHNSEN and R. W. HOVEY.

(Continued from last issue.)

## Alcohol.

The amount of fermentable sugar in the waste sulphite liquor ordinarily varies according to the published data, between 1.5 and 2 per cent, but may in some cases be as high as 2.4 per cent. (Canadian sulphite liquor will vary from 0.5 to 1.75 per cent of fermentable sugars; see contribution by V. K. Kriebel, in *Pulp and Paper Magazine*, Jan. 30, 1919.) As the lower carbohydrates of the wood must be considered as the chief source of the fermentable sugar, the amount of sugar in the liquor may vary to some extent with the wood material, but no doubt the greatest factor in these variations is to be found in the method of cooking. Hagglund, who has published a very instructive work on the present stage of alcohol production from waste sulphite liquor, calls attention to this fact and shows how the formation of sugar depends upon the strength of the liquor as well as upon the temperature. He also shows how the fermentable sugars are partially destroyed at the high temperature prevailing in the digester at the end of the "cook." It is also interesting to note that only very little sugar is formed from the cellulose in the cooking process. The idea of manufacturing alcohol from the waste liquor dates back to the early years of the sulphite pulp industry but not until recent years had this resulted in commercial processes of any importance. Wallin's and Ekstrom's processes are now in operation on a commercial scale in Sweden and the United States and, presumably, to a great extent in Germany; in Norway, Landmark's process has been in operation for some time, and a plant is also established in Sweden for the operation of the same process. Marchand's process has been tried out in an experimental plant in the United States with satisfactory results. The principle is the same in all these processes. The free sulphurous acid must be removed as far as possible from the liquor and recovered, which in some cases is partly effected by concentration of the liquor. The liquor is then neutralized to a certain point of acidity. A suitable yeast is then added and the liquor fermented and distilled. The yield of alcohol depends of course, in the first place, upon the amount of fermentable sugar in the liquor, but the neutralization as well as the fermentation are both processes which require the close

control if the highest possible yield is to be obtained. Although a yield as high as 1.4 per cent by volume has in some cases been obtained Hagglund gives 1.0 per cent (100 per cent alcohol) as a good average. Landmark claims a higher yield, namely 1.2 per cent, with his process and an average of 1.1 per cent, and Marchand's process is said to yield 1—1.25 per cent, 180 proof alcohol.

With regard to the neutralization of the liquor (which usually is previously or simultaneously effectively aerated in order to oxidize certain reducing organic substances) it is not advisable to use lime alone, as in this case a large excess is required, causing an appreciable amount of sugar to be destroyed. Another objection is that it is difficult to obtain a clear solution which is necessary for the fermentation. According to Hagglund, by using a smaller quantity of lime and employing calcium carbonate for the final neutralization these troubles are eliminated. In the Marchand process barium carbonate is employed for neutralization whereas Landmark uses calcium carbonate in his process.

Nitrogen and phosphates are not present in the liquor in the quantity required for a normal fermentation, and must be added to the neutralized liquor. Certain available yeast extracts contain the necessary amount of these substances but if other extracts are used the nutriment must be added in a suitable form. In Landmark's process milk or whey is heated with acid, the precipitate of "lignoasein" is filtered off, and the filtrate added to the sulphite liquor which can then be fermented directly with ordinary brewers' yeast. Ekstrom's process requires a "tempered" yeast which is prepared to meet the special conditions of the sulphite liquor. With regard to the details of the processes of fermentation and distillation reference may be made to Hagglund's publication "Die Sulfitablage und ihre Verarbeitung auf Alkohol." In this same publication the manufacturing cost of a 100 per cent spirit is calculated, assuming a recovery of 3.7 cub. m. (816 gallons) of liquor per metric ton (2204 lb.) of air-dry pulp—4.1 cub. m. (904 gallons) per metric ton (2,204 lb.) of bone dry pulp—as follows:—

Manufacturing cost for 1 cubic metre (220 gallons) of distilled mash.

Cost Items.	33,075 short tons.		22,050 short tons.		11,025 short tons.	
	Marks.	\$	Marks.	\$	Marks.	\$
Steam . . . . .	0.422	0.1000	0.422	0.1000	0.422	0.1000
Nutriment . . . . .	0.083	0.0197	0.083	0.0197	0.083	0.0197
Neutralization . . . . .	0.167	0.0397	0.167	0.0397	0.167	0.0397
Materials . . . . .	0.022	0.0052	0.028	0.0066	0.040	0.0095
Repairs . . . . .	0.055	0.0131	0.078	0.0186	0.117	0.0279
Labour . . . . .	0.165	0.0393	0.225	0.0535	0.335	0.0796
Salaries . . . . .	0.070	0.0168	0.090	0.0214	0.123	0.0292
Miscellaneous . . . . .	0.056	0.0133	0.067	0.0159	0.073	0.0174
	1.040	0.247	1.060	0.276	1.360	0.324

1. The figures are based upon prices in Scandinavia, and are to be changed to suit American conditions. Assuming a 50 per cent increase in salaries, labor and repair costs the manufacturing cost would be \$0.282, \$0.323, and \$0.392. The yield of 100 per cent spirit being on an average 1 per cent by volume, and calculating the cost of an alcohol plant in America as being 50 per cent higher than in Scandinavia, and further allowing for 15 per cent depreciation and interest the total cost and selling price of one litre 100 per cent spirit is given in the following table.

Size of Pulp-mill Short Tons.	Cost of alcohol Plant.	15 per cent. Amortization and interest of plant.
33,075	150,000	22,500
22,050	112,500	16,900
11,025	75,000	11,250

The corresponding prices of an imperial gallon are \$0.220, \$0.251, and \$0.320 and of a United States gallon \$0.183, \$0.209, and \$0.268.

Landmark claims a higher yield of alcohol, namely an average 1.1 per cent, and a lower cost of production, namely \$0.0251 per litre, depreciation and interest and cost of handling included. This corresponds to a price of \$0.115 per imperial gallon or \$0.096 per United States gallon manufactured in Scandinavia. A direct comparison of the two processes on the basis of the published figures is not possible, as the operating cost varies considerably with the size of the plant and with the yield of alcohol. Landmark has based his calculations on a recovery of 6.5 cub. m. (1,430 gallons) liquor per metric ton (2,204 lb.) of pulp and upon plant connected with a 15,000 metric tons (17,000 short tons) pulp-mill. This would mean a yearly production of 1,072,500 litres (236,000 gallons) of alcohol and would require an alcohol plant of the same size as the 30,000 metric tons (33,075 short tons) pulp-mill in the previous example. The chief difference of the two processes is in the neutralization and fermentation, but even if the cost of nutriment, neutralization, and material is subtracted the manufacturing price would still be as high as \$0.186 for an imperial gallon or \$0.158 for a United States gallon of 100 per cent spirit, which is appreciably higher than the cost calculated by Landmark. The value of the "lignoasein" recovered in this process is said to cover very nearly the cost of the milk or whey employed.

As the fermentable sugars represent only 15-20 per cent of the total organic substances in the liquor, the residual liquor from the distillation process should be further utilized. Fuel may be recovered according to Strehlenert's process, but it has been pointed out that an unfavourable precipitate is obtained in cases where much lime has been used for neutralization. Valuable products may also be obtained by destructive distillation of the dry substance.

In the cooking process 7 kilogrammes (14 lb.) methyl alcohol are formed per ton (short) of pulp of which 4.4 lb. can be recovered from the relief gases. One part of this alcohol is lost during the various operations, so that the crude methyl alcohol contains about 3.2 per cent methyl alcohol. The two alcohols can be separated, but of course this is not necessary when the spirit is to be used for industrial purposes.

## Fuel.

The calorific value of wood varies with the different species within wide limits and for spruce is found to be about 8,825 B.T.U. A high-grade sulphite pulp develops about 7,740 B.T.U. Assuming the sulphite pulp to represent 50 per cent of the wood, the solid substance of sulphite liquor from one ton of pulp would theoretically represent about 19,820,000 B.T.U. or about 1,375 pounds of coal of 11,400 B.T.U. In order to be able to utilize these substances for fuel it is necessary to separate them from the liquor and this can

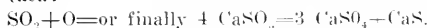
Spirit Produced.	Amortization and interest per litre spirit.	Manufacturing cost.	Selling price.
Litres.	\$	\$	\$
1,110,000	0.0202	0.0282	0.0484
740,000	0.0229	0.0323	0.0552
370,000	0.0315	0.0392	0.0707

be done in one of two ways, either by evaporation of the water or by precipitation of the solid substances. The waste liquor from one ton of pulp represents 2,000 gallons and if all this liquor could be separated from the pulp a considerable quantity of coal would be required for the evaporation of the liquor to dryness. In the manufacture of cell-pitch it was found that one tone of coal was required per ton of cell-pitch of 10 per cent moisture-content. But the cell-pitch having a calorific power of only about 6,300 B.T.U. as against 12,600-14,400 B.T.U. for coal the scheme of direct evaporation would mean a considerable loss in fuel value. If modern multiple effect evaporators could be used for sulphite liquors, a surplus in fuel corresponding to about 500 pounds coal might possibly be obtained if all the liquor were recovered. But this is impossible. Assuming a maximum of 1,000 gallons of liquor per ton of pulp an amount of fuel corresponding only to 250 pounds of coal could be obtained per ton of pulp. This figure might possibly be increased considerably by employing evaporators of high efficiency utilizing the vapors from the evaporating liquor.

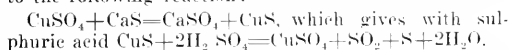
The idea of Strehlenert's process for the recovery of fuel from waste sulphite liquor is based upon the decomposition of the sulphur compounds of the lignin with sulphuric acid at high temperature and pressure. The sulphuric acid is formed by oxidation of the free  $\text{SO}_2$  by air or oxygen. The ash content of the fuel is decreased by a previous treatment of the liquor with sodium bisulphate whereby the calcium can be recovered as sulphate. Details of the process are contained in the abstracts of literature given in the Bulletin.

Since the first patents were granted Strehlenert has investigated and improved the process. It was noticed that the presence of small quantities of iron, zinc, manganese or other hydrogen-forming metals decreased the yield considerably and that a precipitation was almost impossible when as much as 0.004 per cent or more iron was present. According to the patent the oxidation begins at a comparatively low temperature whereas the decomposition takes place at a high temperature and pressure. By introducing the air at a higher temperature the oxidation and decomposition take place simultaneously, and so rapidly that the action of the metal is eliminated. In order to avoid oxidation of sulphurous acid during heating to the temperature of decomposition, relief gases from the sulphite-mill (containing  $\text{SO}_2$ ) are introduced, so that a pressure of one or two atmospheres is secured

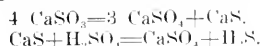
from the beginning. The sulphuric acid is then formed at the critical temperature according to the equation  $3 \text{SO}_2 = 2 \text{SO}_3 + \text{S}$ , and theoretically no air is required. However, the introduction of air is always favorable as it causes the organic compounds to precipitate in a coarser and more easily filtered form than without air. The sulphur formed according to this reaction sublimes and this as well as the excess of sulphurous acid which is set free during the decomposition of the sulphonic acid can be recovered. The relief gases also contain hydrogen sulphide which can be recovered and utilized in the pulp-mill. Under these working conditions only very little sulphuric acid is formed, so that after the reaction the liquor contains only from 0.2 to a maximum of 0.4 per cent total acid with 0.02 per cent free acid. When oxidation is allowed to take place at the early stage of process (at low temperature) the residual liquor contains up to 1.5 per cent sulphuric acid. A high sulphuric acid content is injurious to the autoclave and often makes the precipitate gelatinous and decreases its calorific value. It is therefore important that the oxidation take place as near the critical temperature as possible. According to the first method of operation the precipitation was effected by oxidation of  $\text{SO}_2$  to  $\text{SO}_3$ . The free  $\text{SO}_2$  present in the liquor (often only 0.1) was sufficient to introduce the reaction of decomposition of the lignin compound. The reaction of the inorganic substances is then:—



As copper autoclaves were used first copper oxide and finally copper sulphate were formed according to the following reaction:—



The action of the copper, therefore, is advantageous as it causes the direct formation of fresh quantities of  $\text{SO}_2$ , but this reaction, of course, is injurious to the autoclave and at the present time the autoclaves are made from iron and have a lead lining. The reaction in this case can be expressed by the following equation—



The formation of hydrogen sulphide may be regarded as a disadvantage but the new process requires only 20 to 25 per cent of the air used in the former process. This means that the autoclave can be charged to 75 per cent of its volume with liquor, while formerly only 60 per cent of the autoclave volume could be utilized. With regard to the yield it was stated that only about 75 per cent of the total solids are precipitated, and Strehlenert concludes that the portion precipitated consists of compounds of sulphinic acid while the remaining 25 per cent which are only precipitated with difficulty are sulphonic acid compounds. According to Strehlenert the remaining 25 per cent can be obtained by the addition of peat to the liquor. In calculating the yield per ton of pulp Strehlenert assumes that 1,200 gallons of waste liquor will drain off per ton of pulp and that by employing diffusers 1,800 gallons can easily be recovered. It is a fact, however, that only about 740 gallons of liquor will drain off from the blow-pits per ton of pulp, although 800 gallons can probably be obtained if the draining is continued for a longer period. Assuming that 800 gallons are recovered and that the liquor contains on an average 11 per cent solid substances, 880 pounds of dry substance are present in the liquor from one

ton of pulp, of which a maximum of  $880 \times 0.75 = 660$  pounds are precipitated, while  $880 \times 0.25 = 220$  pounds remain in the liquor and can be recovered by precipitation in the presence of small quantities of peat. Diffusers provided with suction pumps remove the water from the precipitate up to 35 per cent.

The ash content is about 17.18 per cent, if the liquor has not previously been treated with sodium bisulphate or has not been concentrated. The fuel, free from ash and water, develops on an average 12,240 B.T.U. If the fuel contains 50 per cent moisture the calorific value of the precipitate obtained per ton of pulp will amount to approximately 5,800,000 B.T.U., corresponding to about 400 pounds of coal of 14,400 B.T.U. This fuel-value will of course increase with the quantity of liquor which can be removed, and for 1,200 gallons per ton is equal to about 600 pounds of coal. In regard to the heat required in the process, according to Strehlenert, the heat developed in the reaction, should theoretically cover the heat requirements for raising the temperature of the liquor from  $212^\circ - 392^\circ \text{F}$ ., but disregarding this the heat requirements in the process when autoclaves of 2,200 gallons capacity are used would be:—

Heating of the metal of the autoclave about  $180^\circ \text{F}$ ., approximately 436,480 B.T.U.

Heating of 1,650 gallons liquor about  $180^\circ \text{F}$ ., approximately 2,976,000 B.T.U.

Total heat requirement, 3,412,480 B.T.U.

This figure, however, represents the heat required for one single cook. When several autoclaves are combined so that the excess heat from one cook can be utilized in the other autoclaves at least 50 per cent of the heat is saved, and assuming an efficiency of 80 per cent for the boiler and a calorific value of 14,400 B.T.U. for the coal the heat required for 1,650 gallons of liquor will be:—

$$1706240 \text{ B. T. U.}$$

$$\frac{\quad}{14400 \times 0.8} = 148 \text{ pounds coal}$$

or, for 800 gallons, 72 pounds, and for 1,200 gallons, 108 pounds coal. This gives an actual yield of fuel per ton of pulp corresponding to 328 or 492 pounds coal having a calorific value of 14,400 B.T.U., depending upon whether 800 or 1,200 gallons of liquor are recovered. An estimation of operating costs for the production of fuel is made by Strehlenert for a plant in Scandinavia operating 3 autoclaves of 2,200 gallons volume in handling the liquor from a yearly production of 17,000 metric tons (18,733 short tons) of pulp, assuming a recovery of 1,320 gallons of liquor per metric ton (1,200 gallons per short ton.) The operating cost for one metric ton of fuel recovered is according to these calculations kr. 11.79 (\$3.17) equivalent to \$2.88 per short ton. This fuel however is of an inferior quality containing about 18 per cent ash and is generally used in a moist condition. Considering these two points the price of the fuel would be equivalent to a price of about \$5.25 per metric ton of good coal of 14,400 B.T.U. (\$4.75 per short ton.) Strehlenert further assumes the most favorable concentration of the liquor, namely about 17 per cent solid substances, which is very near the concentration of the liquor obtained by indirect heating and forced circulation.

Assuming a concentration of 11 per cent the yield per autoclave charge will be considerably lower, and considering the higher cost of labor, etc., on this content the price per ton of coal recovered will be \$7

and \$7.50 on the basis of a 30,000-metric-ton (33,075 short tons) mill and recovery of 1,320 and 880 gallons of liquor respectively per metric ton of pulp (1,200 and 800 gallons respectively per short ton.)

The calculations are as follows: In case of 880 gallons of liquor per metric ton (800 gallons per short ton) of pulp, 726 pounds of fuel, equivalent to 440 pounds of coal (14,400 B.T.U.) are obtained per metric ton of pulp (660 pounds of fuel, equivalent to 400 pounds of coal per short ton.) Eighteen per cent of this fuel is used in the process, leaving 361 pounds of coal as actual yield per metric ton (328 pounds per short ton.) The fuel recovery from a 30,000-metric-ton (33,075 short tons) mill would therefore correspond to 4,920 metric tons of coal per year (5,425 short tons.) Four autoclaves are required, and 7 men in 3 shifts for their operation. The cost of buildings is placed at \$55,000 and the cost of apparatus at \$89,000. Assuming a depreciation of the buildings of 10 per cent and of the apparatus of 15 per cent the operating cost for the production of one ton of coal (14,400 B.T.U.) will be:—

	Metric tons.	Short tons.
Depreciation of buildings . . . .	\$1.12	\$1.02
Depreciation of apparatus . . . .	2.71	2.46
Labor . . . . .	3.17	2.87
Power . . . . .	0.02	0.02
Repairs . . . . .	0.50	0.45
<b>Total cost per ton of coal . . . .</b>	<b>\$7.52</b>	<b>\$6.82</b>

In case of 1,320 gallons of liquor per metric ton of pulp (1,200 gallons per short ton) fuel corresponding to 540 pounds of coal is obtained (492 pounds per short ton.) Six autoclaves are required operated by 9 men in 3 shifts. The operating cost calculated as above is found to be about \$7 per metric ton of coal (\$6.35 per short ton.) This very high cost might be considerably reduced by employing liquor from the Morterud process, which will increase the yield per autoclave as will also the addition of a small quantity (0.25-0.5 per cent) of peat in the decomposition process. The recovery of by-products such as acetone, acetic acid, formic acid, and methyl alcohol may also reduce the cost of the fuel considerably. Plans have been made to dry-distil the precipitate of organic substances, using the residual coke for fuel.

Very recently Landmark has proposed a modification of this process in which ozone is formed from the air in the upper part of the autoclave by an electric spark. The temperature and pressure required in the process should in this way be appreciably decreased. A discussion is at present going on between the two inventors which probably will lead to interesting results.

In addition to complete reviews of the literature on the subjects summarized in the chapter introductions that have here been reproduced, the Bulletin contains abstracts of articles and patents relating to the use of waste liquor for fodder, fertilizer, dye-stuffs, and sulphur, as well as reviews of the literature on evaporation and other related topics.

As previously stated, copies of Bulletin No. 66 can be had from the Forestry Branch, Ottawa, for 50 cents.

Get the habit of doing things right. This will mean greater production, less waste, increased earnings. Work for good times all the time.

**SAYS "EXPERTS" RUIN MILL.**

To the Editor of Pulp and Paper Magazine of Canada.  
Dear Sir: Don't you think it pretty near time something was done to stop so-called "Pulp Mill Experts" from across the line, imposing on honest investors and ruining the reputation of their mill.

We have an example of this in the east, where a bunch of "experts" have charge of a new mill, putting her in the junk heap.

**HONEST PULP MAKER.**

If this condition exists in our industry it certainly is time that something be done about it. We are not in a position to criticize this particular case, but it is our duty to prevent others from being "stung" if this inquiry is well-founded.

**BEAVER COVE LUMBER AND PULP COMPANY WILL BE OPERATING SOON.**

Mr. W. O. King, Treasurer of the Beaver Cove Lumber and Pulp Company, Ltd., states that their plant at Beaver Cove, British Columbia, will be operating by September 1st. Mr. King has just returned from the plant. He will go on to Chicago and New York before returning to the plant the first of September.

Mr. White, President and General Manager, is now at the plant and will stay until they begin operations.

**NEW MACHINES FOR SPANISH RIVER.**

It has been learned that arrangements have been completed for an issue of \$3,500,000 Spanish River Pulp and Paper Mills ten-year second mortgage notes, a considerable portion of which will be employed for refunding purposes, but it is interesting to note that on the manufacturing side the money will provide for two additional paper machines, which will add 100 tons of paper to the daily output, bringing the total capacity up to approximately 600 tons per day.

The issue has been sold to Peabody, Houghteling and Co., Chicago, a financial house which has been intimately associated with the pulp and paper industry in Canada.

This issue will take care of the payment of arrears of interest on the bonds, which has been carried as an obligation for some years, although current obligations are being met. It will also retire the issue of £300,000 second mortgage notes in England. This is equivalent to about \$1,460,000. No dividend could be paid on the preferred, according to agreement, until this issue was retired. Then comes the provision for the new paper machines.

These steps would have to be preliminary to any action with reference to the proposed funding of arrears of dividends on the preferred stock, with additional stock of the same class. Details in that connection will not be forthcoming until the annual statement for the past fiscal year will be presented.

It is understood in the Street that this will make a very favorable showing, the earnings approximating 15 per cent, applicable to the common stock after allowing for one full year's distribution of 7 per cent on account of outstanding preferred stock.

Remember that on your care and watchfulness and that of your fellow-workers depend not only your safety and theirs, but also the future and comfort and happiness of your family. Your safety and theirs is of much more importance than anything else.

Time is man's capital, to do with as he will, to squander, to waste or to use with wisdom.



# A Souvenir of Kenogami

An interesting souvenir of the recent visit of the Technical Section to their mills was provided by Price Bros. & Co., in the shape of an attractive pamphlet describing the plants and other operations of the company. The principal plants are the Kenogami Paper Mills, situated at Kenogami, County of Chicoutimi, Quebec, about two miles from Jonquiere Station, on the Canadian National (Quebec & Lake St. John) Railways, which commenced operating in 1912, and the Jonquiere Pulp Co., at Jonquiere, which commenced operating in 1899. There is much interesting information in the booklet, from which we quote:

### The Paper Mill.

Four 156" Walmisley Machines; average trim . . . . . 145"  
Average speed 620 ft. per minute.

Note:—A fifth machine of similar make and design will be installed this summer.)

Daily production for year . . . . . 212 tons.  
Yearly production . . . . . 64,000 "  
Estimated production 1919 . . . . . 64,156 "  
Pounds paper per inch trim . . . . . 731 lbs.  
Average weight of paper (one year) . . . 32.08  
Average daily running time—all machines . . . . . 22 H. 40 M.

Tons of paper made per wire . . . . . 920  
Tons of paper made per jacket . . . . . 1,162  
Tons of paper made per first felt . . . . . 440  
Tons of paper made per second felt . . . . 789  
Tons of paper made per third felt . . . . . 613  
Tons of paper made per first sec.—top . . . 5,519  
Tons of paper made per first sec.—bot. . . 4,416  
Tons of paper made per second sec.—top . . 2,510  
Tons of paper made per second sec.—bot. . 3,680

Total No. of men employed per ton of paper made daily . . . . . 3.0  
Average per cent sulphite . . . . . 24%  
Pounds of coal per ton of paper . . . . . 750  
Carloads of paper shipped daily . . . . . 10  
No. of gallons fresh water per ton daily . 3,000  
Electric power . . . . . 1,300 H.P.

### Sulphite Mill.

No. of Digesters . . . . . 4  
Nos 1 and 2 are 13 ft. x 47 ft. (inside dimensions)  
No. 3 is 10 ft. x 47 ft. (inside dimensions.)  
No. 4 is 14 ft. x 47 ft. (inside dimensions.)  
(Note:—A 5th Digested 14' x 47' has been secured and is practically installed.)

Total yearly production . . . . . 25,000 tons.  
Average daily production . . . . . 90 "  
Estimated production for 1919 . . . . . 25,230 "  
Cords of wood per ton sulphite (no screenings . . . . . 1.76 cords.  
Pounds of sulphur per ton of pulp . . . . . 220 lbs.  
Analysis of cooking acid.—(Free 3.88%.  
Com. 1.12%. Total 5%.)  
Pounds of coal per ton of sulphite . . . . 1,200 lbs.  
Car loads sulphite shipped daily . . . . . 2  
Percentage of screenings . . . . . 4.85%  
Percentage of sulphur recovered . . . . . 54%

No. Gallons of fresh water per ton of Sulphite Daily . . . . . 80,000 gals.

Acid system consists of 6 limestone towers, each making 30,000 imp. gals. of acid in 24 hours.—Total 180,000 imp. gals.

No. of gals. acid per ton of pulp . . . . . 2,000 gals.  
Electrical H.P. . . . . 875 H.P.

Utilization of the waste sulphite liquor has for a number of years attracted the attention of Technical men of the pulp and paper industry. In nearly all cases the process followed is one of evaporating the liquor to a density suitable for the purpose intended, such as a core compound for foundry work or a binder for roads. Many chemists have succeeded in making ethyl alcohol T.N.T., turpentine, and sugar, but none



Sir William Price.

of these processes, although possible, are a commercial success.

Price Brothers & Co., have, through the co-operation of its sulphite superintendent and chemical laboratory, successfully made a glue with which they finish all their rolls of paper, and also make their paper cores. At times they are thus enabled to utilize the entire output of waste liquor.

### Groundwood Mill

Number of grinders—operated by water . . . 37  
Number of grinders—operated by electricity . . . . . 7

Average daily production by water . . . . 138 tons.  
Average daily production by electricity . . 40 "  
Estimated production for 1919 . . . . . 54,704 "

Daily production by water (running full) . 255 tons.  
% Tailing or waste . . . . . 2.3%

Water used in grinding (with 7.10th 2.00 extra) H.P. of wheels 8,3500, 1000 S.P. efficiency	270 feet
Discharge of Water	150 C.S.F.
H.P. in total mill	62
Monthly production by motor	1,200 tons.
Electric H.P. per ton for grinding	60
No. of gallons fresh water per ton groundwood daily	16,000
Electrical H.P. for screens, pumps, etc.	1,000
Pounds of Groundwood per cord of wood	2,188

Wood used: Balsam, 60%; spruce, 40%.

The groundwood is pumped from the Grinder Room to the Screen Room at the Mill, a distance of about 3500 feet, against a pressure of 135 lbs. This is accomplished by two water turbines operating pumps, consuming 800 H.P. total.

**Wood Room.**

Equipment Consists of:

- 2 Hand Barkers.
- 3 Chippers.
- 3 Drum Barkers, (Portland type)  
and Slasher with six saws.

Average No. of cords sawn daily (summer months)	800
Maximum No. of cords sawn in one day	1,200
Average diameter of logs	6"
Total No. cords of wood used yearly	102,000

Wood used: Balsam, 60%; spruce, 40%.

The sawdust obtained from the sawing of the logs is .48 of 1% by volume. The sawdust from the chip screens is 2% by volume. The loss of wood in drum barking is 1.5%, making a total loss in preparing wood of 3.98%.

Any loss in addition to this is due to rotten wood, and varies from year to year. Under present conditions it is 6%.

**Boiler Room.**

- 8 Tubular boilers—Murphy stokers.
- 2 Babcock & Wilcox wood boilers.
- 2 Babcock & Wilcox coal boilers.

Average B.H.P. produced	3,500
Total coal consumption for year	140,000 tons.

Height of brick chimney 125 ft.

Over-all efficiency 73%

The burning of waste and drift wood under the boiler is an important feature in the operations. 600 boiler horse power is developed during six months from this source of fuel. On a basis of 4 lbs. of coal per boiler horse power, this is an annual saving of \$45,000.00, assuming the cost of coal to be \$10.00 per ton.

During the summer, 35 cars of sawmill waste and sawdust, derived from the company's mill at Shipshaw, are burned each month.

**Electrical Department.**

- 2 Power houses — Shipshaw Falls and Kenogami
- Grinder Room.

85 ft. Head of water — Shipshaw.  
1,200 Cu. sec. feet used—Shipshaw.

**Electric Power.**

Is generated at two stations; one at Shipshaw Falls, on the Shipshaw River, three miles distant, the other located on the River Au Sable at the Grinder Room.

Power is generated in Shipshaw at 7,200 volts by three 2,250 K.W., water turbine driven generators, capable of delivering a total of 7,500 K.W., or 10,000 H.P.

This power is 3-phase, 60 cycle, alternating current, and is transmitted over duplicate transmission lines to the Generating Station at Kenogami Mills, which is equipped with two 6,600 volt Generators, each of 2,345 K.W., making an additional 6,300 H.P. available. At this point is also installed a 2,800 H.P., 6,600 volt synchronous motor for grinder operation.

From this generation station, the power is transmitted to the sub-station at the mills, which contains the step down transformers distributing switchboard. The transformers are three single phase, oil insulated, water cooled units, each of 2,000 K.W., primary volts, 6,400, secondary 600, connected delta delta for the Kenogami mill power and mill and village lighting systems.

Automatic regulators in the power plants are adjusted to keep the voltage constant at this point.

Twelve distributing circuits supply the various departments of manufacture with power at 550 volts, there being a total of 200 motors, ranging in size from 1/2 H.P. to 300 H.P., all of the induction type.

Power is also transmitted from the sub-station to the Jonquiere mill at 2,300 volts, by means of a 3 phase, 600 K.W. step up transformer. The Jonquiere mill, which also receives power at 6,600 volts, contains 65 motors of all sizes up to 250 H.P. This mill, with the exception of the power for pulp grinding, is operated entirely by electricity.

As indicated above, power is also supplied from the sub-station for lighting the village of Kenogami, and its industries.

(Note:—A proposed 20,000 H.P. development on the Shipshaw River is now being surveyed.)

**Foundry.**

In the spring of 1919, a brass and iron foundry was installed, at a cost of \$15,000.00. It is now turning out 15 tons of iron, and 2 to 3 tons of brass and bronze castings per month, thus effecting a saving of 1c per lb. on iron, and 20c. per lb on bronze castings.

**Engineering Department.**

During the past four years the Engineering Department has designed and constructed improvements and additions to the value of \$1,154,000.00. The following is a detailed list of installations:—

**Kenogami Mills.**

- Building and Blowpits for three ten-ton Digesters.
- Twenty additional Grinders and Building.
- One thousand B. H. P. extension to Boiler House.
- A Two-Paper-Machine Room.
- Foundry and Wood Working Shop.

**Jonquiere Mill.**

- Forty-two hundred H. P. Hydraulic Development, consisting of head gates, penstocks, and water wheels.
- Grinder Room for nine Grinders.
- New Beater and Screen Room.
- Boiler House, Economizer and Concrete Chimney, complete.

The engineering expenses have been approximately 2% of the cost; usually 5% is considered a fair figure. The results obtained have been very satisfactory, and practically no changes nor alterations made in the original lay-outs.

#### Chemical Laboratory.

A new chemical laboratory is being equipped in the Office Building. One room in it will be used for special chemistry, and the adjoining one for special work in connection with pulp and paper. Opposite the laboratories will be two offices and a storage room for samples and apparatus, and the hallway between will serve as a balance room and library.

Electricity will be used for water still, hot plates, drying ovens, muffle and combination furnaces, electrolytic apparatus and small motors. A gasoline gas machine will be installed for laboratory supply. The benches will be yellow birch, the tops being coated with resistant aniline mixture. The sinks will be Alberene stone. Sized and painted canvas dryer felt is used on the floors, and connections for water, gas, compressed air, and electricity are provided, and the necessary waste fittings. It is intended to install small digesters, beaters and other special apparatus in the pulp and paper laboratory.

A regular system of paper testing has been started for all products of the two mills as a guide to controlling quality. Methods are also being worked out to determine the quality of groundwood and sulphite manufactured. The work formerly done on the testing of supplies and chemical control in mills is being extended to cover special tests and investigations of a research nature.

#### Economy and Efficiency Department.

The Economy and Efficiency Department charts all records of production and consumption of material and keeps department heads well supplied with comparative figures. A standard of production for the year is always made in advance, and these figures worked to. In no case has a department failed to produce the required result.

In 1918, the efficiency of the mill was 8% in excess of 1917, and judging from the records of the past four months, 1919 bids fair to be the banner year of Price Brothers & Co. The increase in efficiency is mainly due to the different department heads working in perfect harmony and absolute co-operation with the manager.

#### Traffic Department.

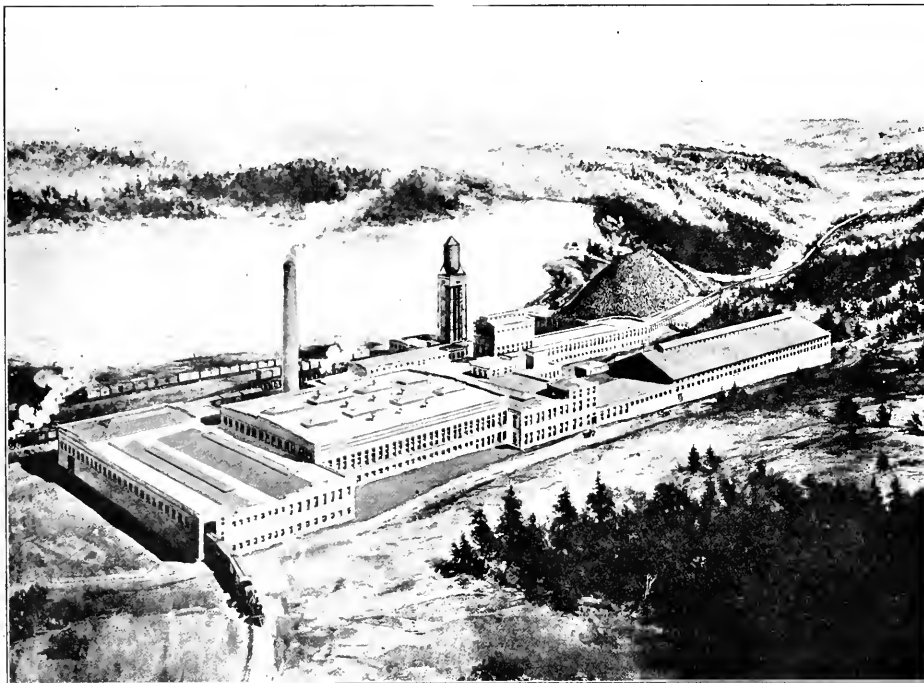
The company operates two locomotives, and a travelling crane for handling coal and miscellaneous material.

All shipments and inward freight have to be handled over the company's railroad between Jonquiere and Kenogami.

Under normal conditions, this railroad handles daily 130 cars of miscellaneous freight.

#### The Village of Kenogami.

The village of Kenogami and the mills are contemporaries, the one owing its existence to the other. The name is derived from that of a lake about ten miles distant, through which the bulk of the pulpwood used in the manufacture of paper is brought from Price Brothers' extensive limits on the Rivers Pikawau and Ecorse, although in the future a portion of the supply will be derived from the Shipshaw district in the North.



Bird's-eye View of Kenogami Mills.

The mill is inhabited entirely by employees, their families, and a few persons dependent on the mills for employment; and the population numbers some 1700 souls. It is admirably placed, among beautiful surroundings, well lighted and drained, and its well-being carefully fostered by the company and the village municipality, which work in perfect accord.

The principal buildings are the two churches, (Protestant and Roman Catholic); last Protestant school, built in 1916, the hospital, which was completed last year; the staff house, a comfortable hostelry for the staff; and the King George House, a large boarding house for men. There are several fine residences on the west side of the track, mainly occupied by members of the staff, and here is also situated the manager's residence, which stands in a commanding position overlooking the River au Sable, the mill pool and dam.

There is also a flourishing dairy farm, the property of the company, in which is housed a small herd of pure bred Ayrshire cattle. This farm is used to provide the residents with milk, butter, and other farm produce.

At the present time the company has under construction several additional residences, and a large club house (nearly completed), for the recreation of the men. In the latter is incorporated a moving picture theatre, and the entire cost of the new building operations will be in the neighborhood of \$80,000.00. These buildings have been designed by, and are being erected under the supervision of Mr. Alfred Lamontagne, architect, Chicoutimi, who was also responsible for the school house, and the hospital, which together cost \$50,000.00. There are also a number of houses being built by private enterprise.

**Jonquiere Pulp Company.**

1 Bagley and Sewall Fourdrinier Machine.	
Average trim 101 inches.	
Average lbs. paper daily . . . . .	69,100
1 Black & Clawson Board Machine.	
Average trim. 70 inches.	
Average production daily . . . . .	50,400 lbs.
9 grinders.	
Daily production groundwood . . . .	62 tons.
Tons coal used yearly . . . . .	8,500 tons.
No. of men employed . . . . .	224
No. of men per ton paper and cardboard combined, daily . . . . .	3.8

Average percentage sulphite for year for both machines—all orders . . . . . 27%

Bleaching is carried out on a small scale for liners of special boards. About three tons of sulphite are bleached per month.

The Erfurt system of sizing is used, giving size with 37% free rosin. Water-proof tag, bottle-cap and oyster-pail are the board stocks requiring more than ordinary sizing.

Colored papers, such as ticket, transfer and board specialties, are made in considerable variety.

**Other Undertakings of Price Brothers and Company, Limited.**

At Rivouski, the company has a 6 grinder pulp

mill, which makes ten thousand tons of groundwood pulp yearly.

Saws-mills, etc.: Batiseau, Montmagny, Cap St. Ignace, Rimouski, Matane, Salmon Lake, Chicoutimi and Saguenay District.

The total holdings of timber all situated in the Province of Quebec, are about eight thousand square miles, five thousand of which are in the vicinity of Kenogami, the balance being principally on the South Shore of the St. Lawrence River. The saw-mills annually produce thirty million feet of lumber, eighty thousand cross-ties, and several billion Cedar shingles.

**SAMPLING PULP.**

This operator with a hand ladle stands on narrow platform between two pulp vats and takes samples of



the pulp. He is in danger of being splashed by hot pulp—also of falling into a vat because no handrailing is provided.

Here is shown a simple satisfactory ladle operating



device which permits samples to be taken in safety.—National Safety Council.

# The Grandeur of the Saguenay



"A Ruggedness That Accentuates Their Age"

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On our left rise the steep escarpments of granite that run in regular formation from Cape Ste. Anne to Cape St. Francis. Browned by the action of the elements, they have a ruggedness that accentuates their age. Clinging to their sides, wherever they have been able to obtain a foothold, grow stalwart saplings of silver birch; crowning their topmost heights, grow magnificent forests of spruce.

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Our Largest Steamer is but a Pny thing on the Mighty Saguenay.



Montmorency Falls, near Quebec...Higher than Niagara.

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Outlining the horizon are the Laurentians, father of all the mountains; in the nearer distance, a verdant valley of exquisite charm in which we catch an occasional glimpse of the humble home of Jean Baptiste, while around us, peaceful and sparkling, flow the waters that all too soon are to be robbed of their silver, sparkling hue. We enter Ha! Ha! Bay.

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"Now We Seem To Be Sailing on Some Inland Sea"

# A New Departure in Technical Meetings

From its first year in its history, the Technical Section of the Canadian Pulp and Paper Association held its summer session on the way to the object of its visit. The members near and west of Montreal gathered in that city on July 28, and went on board the Canadian Steamship Company's steamer "Montreal" about 7 p.m. At 7:30 the ropes were cast off and the journey to Chicoutimi and Kenogami began, with most of the party in the dining room. Early next morning the travellers were aroused at Quebec to make the change to the "Murray Bay," which, however, did not sail until after lunch. Here the Laurentide and Belgo contingents joined the main force, and the five escorts, who came down from Kenogami to extend the courtesy of Price Bros. & Co., who were the hosts of the Section.

After a most delightful trip and interesting meeting, most of the party returned to Quebec on July 31, and Montreal the next morning. The lateness of the boat at Chicoutimi cut the visit to Kenogami mills a

A cablegram conveying the greetings of the President of the Canadian Pulp & Paper Association, and the Secretary, who at present is in England, created considerable amusement. The cable from Mr. Dawe and the message from Mr. Bothwell were forwarded from Montreal, and as received on the Steamer, Bothwell was spelled "both well." There was some guessing as to who the second party might be who shared the good health of the Secretary.

## Reports of Committees.

The acting secretary of the Section, Mr. Edward Beck, was prevented by the responsibilities of office from attending the meeting, but had prepared a rather lengthy agenda for the guidance of the meeting. According to this, the various committee reports were first taken up by the meeting. The report of the Committee on Abstracts and Publications was received. The report of the Committee on Education was read by Mr. Carruthers and was commended by the chairman who said it showed hard work and good progress. The report represented a movement which requires the co-operation of the entire membership and the program of work which the committee has taken hold of will take considerable time to complete, but will render great service to the industry. As the report contained a reference to the progress of the work on preparing textbooks the discussion centred on this phase and it was suggested that proofs of the various sections should be submitted to members for their comment and improvement.

Speaking along this line Mr. Carruthers, who is chairman of the Joint Executive Committee, stated they were in touch with publishers and that proofs would be sent out as suggested. The Committee feels that they should retain the rights of publication, a matter requiring careful consideration.

Answering Col. Ray, who represented Sir Wm. Price and the company as hosts of the Technical Section, it was said that the books would be entirely satisfactory for use in high school as well as correspondence courses. In reply to another question the Chairman of the Committee stated that there is no intention of joining with other educational organizations, but that the efforts of the Committee will be centred entirely on benefiting the pulp and paper industry. The Chairman also explained the difference in the method required for raising the funds in Canada and the United States. The Canadian mills are assessed as members of the Association whereas on the other side of the line the Technical Association has no such jurisdiction for the mills, but that the manufacturers are coming forward generously to the support of the effort and there is no question of the success of the Committee in finding the necessary funds.

One of the important points brought up in the discussion was the reluctance of superintendents to write down the common things in connection with the operation of pulp and paper machinery. It was suggested that the editor of the textbook be supplied with the names of superintendents so that a letter might be sent to each, asking him to jot down notes regarding the every day matters that an apprentice should know.

The report of the Committee on Testing Moisture in Pulp was received.

There was no report at this meeting from the Com-



John Stadler, Chairman Technical Section.

bit short, so eight of the party remained for a more thorough inspection.

The first meeting of the Technical Section of the Canadian Pulp & Paper Association in its mid-summer 1919 Convention, was held in the smoking room of the Steamer "Murray Bay," on Wednesday, July 31st, at 3 o'clock in the afternoon. The chairman of the Section, Mr. John Stadler, presided, and Mr. J. J. Harpell, in the absence of the Secretary, took the minutes of the meeting.

In his opening remarks Mr. Stadler pointed out that their first Chairman, Dr. John Bates, had left the sultry climate of Montreal for the cool North with the result that he had been saddled with the responsibility of chairman. The Section from its organization had a steady and healthy growth and he was glad to see such a good and representative attendance at the present meeting.

The minutes of the previous meeting were read and

mittee on Statistics nor from the Advisory Committee on Forest Products Laboratories, nor from the Committee on Samples.

An oral report from the Committee on Program was given by Mr. Rolland and accepted.

Mr. Stadler reported for the Committee on Mechanical Standards that manufacturers of equipment were a bit slow in co-operating with the efforts of the Committee. The work is important, but progress is slow. The Committee, however, will stick to it. The report was accepted.

A report on Standard Methods of Analysis was passed over till later.

Committee report will be printed next week.

#### Reading of Papers.

The meeting then listened to the reading of the papers. The first was a contribution by Mr. O. F. Bryant, formerly with the Forest Products Laboratory but now with Bennett, Ltd., on "The Development of the Mill Laboratory." This paper was printed in full in the Pulp & Paper Magazine for July 31st. The paper was read by Mr. Carruthers and either so com-



9.—Bundles packed flat; ordinary type of wrapping. Illustrating Export Packing, see p. 642.

pletely covered the subject that no discussion was necessary or the meeting was over-bashful or short of ideas, for there was little comment or discussion. This lack of debate has been growing more noticeable in recent meetings of most of our technical societies.

The second paper was contributed by Mr. G. Meerbergen of the Belgo-Canadian Pulp & Paper Co. on "Export Packing" and was read by Mr. Harpell. This paper dealt particularly with the packing of newsprint sheets for South American countries and gave an interesting description of the requirement for some of the means of transportation in that continent. The paper was illustrated by a number of interesting photographs. It is printed in full on other page of this magazine.

#### Invited to Send Problems.

Under the head of new business there came a cordial invitation from Mr. Ross Campbell, of the American Writing Paper Co. for members of the Technical Section to send problems to their laboratory for consideration and possible solution.

#### Conditions for Student Members' Essay Competition.

In view of the number of students who have expressed a desire to submit essays on their summer work it was necessary to adopt some regulations gov-

erning the contest. The following were adopted although individual mills will reserve the right to review the essays, which naturally should not be published without the approval of the concern where the students were employed, in order to avoid the publication of incorrect or untimely information.

*First.*—The essay shall consist of not more than 2,000 words and shall represent the experience and observations of the author during the summer of 1919.

*Second.*—Photographs and diagrams used to illustrate the essay need not be the work of the author, and if from other sources, the origin shall be stated.

*Third.*—Manuscript shall be paper approximately 8 x 11 and written, or preferably typewritten, on one side of the paper only.

*Fourth.*—The contest shall close December 1st, 1919.

*Fifth.*—Essays shall be submitted in a sealed envelope and neither envelope nor essay shall bear the name of the author and this shall be enclosed with a letter in a second envelope addressed to the Secretary of the Canadian Pulp & Paper Association, 304 Shaughnessy Bldg., Montreal.

Three cash prizes with appropriate medals, have been offered.

#### A New Line of Service.

The following suggestion which was submitted by Mr. Shipman, of the Spanish River Pulp & Paper Mills for a scheme by which the Technical Section might be of more service to the members was discussed and definite action postponed until the meeting to be called the following day, at which time it was adopted.

For some time our company has felt that the Technical Section is peculiarly fitted to render to the different companies represented in the Section by its roll of membership a still further measure of service by the establishment of some sort of system whereby, when problems of a technical nature either in chemical or engineering lines arise in the mill, information and help may be gained on the question through the co-operation of the Technical Section membership.

To this end, as a member of the Technical Section, I wish to submit the following general outline of a scheme for the consideration of the Section at its summer meeting in Kenogami.

1.—Whenever any member of the Section has some particular problem on hand, say, for example, the designing and arrangement of new mill equipment, or some problem in connection with the handling and operation of present equipment, boiler house problems and so forth, he shall be at liberty to submit to the Secretary of the Technical Section a questionnaire giving in detail his particular problem.

2.—The Secretary of the Technical Section shall then have copies of the questionnaire prepared and sent to all the mills who have employees within the membership of the Section. There would necessarily be cases, like groundwood problems for instance, where certain mills would not be in the ground wood business, but whose employees that were members of the Section might possibly have information on the subject; further, the submission of the questionnaire might introduce certain phases of the particular problem which might be of special interest to the mill in question even though they were not in that particular business.

3.—On receipt of the questionnaire by the different

Secretary of the Technical Section the company to supply in duplicate, one direct to the company and the other for application for information and the other to the Secretary of the Technical Section.

4. Anybody receiving the questionnaire and desiring to know the consensus of information submitted by the total of the mills could then obtain same by application to the Secretary.

5. If the Secretary thought advisable the consensus of information collected on certain problems might be published in the Technical Section's official journal, Pulp & Paper Magazine of Canada, for the benefit of the trade.

6. One result of such a system would be that any subject which any member desired full discussion on at any regular meeting of the Technical Section would thus have been brought to the attention of the membership in such time that delay would not be caused by having it hold over several months to the next regular meeting.

7. The bringing up of the subject and the answering of the questionnaires might in certain cases lead up to special investigations which could be instituted by the appointment of special committees between the times of regular meetings.

8.—On consideration of this communication it may be thought advisable by the Technical Section to have the names of both the company making the questionnaire and the companies replying withheld. In such case the replies would be made direct to the Secretary of the Technical Section only, and not to the company making the questionnaire.

9.—This and other details which may arise in discussion of this communication I will gladly leave to the consensus of opinion as expressed by the Technical Section but I would especially ask for its serious consideration by the members in attendance at the Kenogami meeting and if thought advisable some action taken whereby such a scheme may be put into effect.

At the January meeting the methods of analysis worked out by the Committee on standard methods during the previous year were submitted in printed form with the understanding that after a six months period of probation they might be approved by the Section. The matter was brought to the attention of the meeting and was referred to the executive with the suggestion that they appoint a Committee on which Mr. A. G. Durgin, of the Spanish River Mills should serve, to deal with this question.

#### Representation on Committees.

A letter was read relating to the appointment of a representative on the Joint Committee of Technical Organizations and Mr. Crossley was appointed to represent the Technical Section.

The purpose of the committee is set forth as follows: There is a body known as the "Joint Committee of Technical Organizations," consisting of representatives of Canadian societies, whose membership is made up of chemical, electrical and civil engineers, architects, etc. This committee was formed with a view to advising the Government on technical matters during the war. It is proposed to make it a more permanent organization. It would be a very good move for the Technical Section of the Pulp and Paper Association to be represented. I suggest that the Council write to Mr. R. D. Galbraith, Secretary, Joint Committee Technical Organizations, Excelsior Life Building, Toronto, asking for representation. There is a Sub-committee of this committee which has to do with Education, and our

membership would add to the strength of the Joint Committee for any lines of activity which might be carried on for the benefit of Canadian industry.

Similarly, the Chairman of the Committee of Mechanical Standards (Mr. Stadler), was elected to act as representative of the Technical Section on the main Committee of the Canadian Engineering Standards Association, whose communication reads:

"At one of the early meetings of the original members of our Main Committee the desirability of appointing as a member of that Committee a gentleman familiar with the requirements of the pulp and paper industry was emphasized, and by direction of the Executive Committee I now write to ask you to be good enough to advise us regarding this matter. The Committee desires the assistance of a gentleman qualified to represent the interests of the pulp and paper trade and familiar with the methods and equipment in use. You will understand that the Main Committee does not, of course, itself do any of the technical work, this being accomplished by Sectional Committees appointed to deal with specific tasks. The chief function of the Main Committee is to pass upon the work of such Sectional or Sub-Committees."

The meeting passed a motion authorizing the Acting Secretary to sign cheques during the absence of the Secretary.

#### Conservation of Forests Discussed.

Considerable discussion arose over the matter of the conservation of our forests. Mr. Carruthers stated that a good deal of talking had been done, but very little in the way of definite results had been accomplished and that something tangible should be forthcoming in the matter of reforestation and a proper utilization of our forest wealth. It was brought out that the Pulp and Paper Association already had the Woodlands Section in whose province this matter properly belongs and that it would be decidedly advisable to spur them on to greater effort and to back them up in their attempts to improve the forestry conditions.

Col. Ray contributed some excellent remarks that were quite to the point. He stated that a few years ago a boom of logs contained sticks from 13in. and up, but now the diameters run to as small as 2in. in many cases. The time has come when we must do something, and do it quickly.

A Committee consisting of Geo. Carruthers, W. B. Campbell, J. J. Harpell, L. H. Shipman and J. S. Bates was appointed to draw up and present a resolution at a later meeting.

Adjournment was then taken for dinner and an evening of sociability.

We are not inclined to tell any tales of what happened during the evening, but if any of our readers could get certain members of the party in a corner it is likely that some interesting information could be obtained. (Jack Canuck please notice.)

#### The Second Meeting.

On Wednesday morning at 11 a.m., the Chairman again called to order such of the members as could be gathered in and the postponed business was completed. The first matter was the suggestion of Mr. Shipman regarding the exchange of ideas and information and this action was voted without delay.

The Committee on Resolutions Relating to Forestry Conditions reported the suggestion that the editor of the Pulp & Paper Magazine get in touch with the Woodlands Section, the Forestry Association, the vari-



ous educational associations, the Union of Canadian Municipalities and others who might be interested, with the idea of arranging a meeting to draw up a definite program of action or to arrange for a larger meeting to deal with this matter. It is hardly the province of the Technical Section to attempt action alone, but the matter is of great interest to the members of the Technical Section and is of very urgent importance. The suggestion of the Committee was favorably received.

#### The Trip to the Mills.

Because of a delay of several hours in leaving Quebec the boat was late in arriving at Chicoutimi so that it was unfortunately impossible to make arrangements to visit the biggest groundwood mill in Canada, that of the Chicoutimi Pulp & Power Co. As it was the afternoon was all too short for the crowded program that had been arranged. The provisions made by Price Bros. were excellent so that when the train arrived at Jonquiere, autos immediately took the party to the mills and an inspection was made, not only of the groundwood, sulphite, and paper mills, but also of the most interesting by-products department. The visitors saw an excellent mill which was exceptionally clean, even for one dressed up for company. Some of the party remarked particularly on the courtesy and attention of Mr. McCaughy, who acted as guide in a most satisfactory way and who wears his several military decorations with becoming modesty.

After a busy afternoon during which many new ideas were gathered by the members of the Section, supper was served at the schoolhouse at which the wives of the staff officiated. The supper was excellent and greatly enjoyed and our reporter says to underline the excellent. Mr. Carruthers proposed a vote of thanks to Price Bros. for their courtesy and successful effort to make the trip a most enjoyable one and mentioned especially the fine attention of Col. Ray and others of the staff. The efforts of Superintendent John Ball also came in for individual attention.

Col. Ray responded for the company, and in spite of the loss of his notes, which some one unkindly referred to as having leaked out from his bag during the party previously mentioned, succeeded in entertaining the diners with an interesting and humorous speech. Mr. Ball was also given a chance to speak for himself, which he did to the entire satisfaction of the party.

About the time for adjournment it was announced that the train was one hour late and this time was spent in telling stories, to the great enjoyment of all. Mr. Carruthers and Col. Ray carried off the honours, and it is reported that several new stories made their appearance on this occasion. Some valuable lessons were taught such as knowing how to get a drink when broke, although in some localities this may be now useless knowledge.

#### Off to Ha! Ha! Bay.

The story hour was all too short when the train was announced and the party started for St. Alphonse and the return journey to St. Lawrence River ports. Price Bros. had made all the arrangements and the Section were the guests of these delightful hosts from the time they left Chicoutimi till they stepped off the train at St. Alphonse.

Nearby on the picturesque shores of this inlet from the Saguenay is situated the fine new mill of the Ha! Ha! Bay Sulphite Co. The plant is one of the newest

in Canada and contains a number of novel features. They produce a high grade sulphite pulp and its entire product is exported. The visit to the mill was made by moonlight with the aid of electricity and after the inspection the company entertained the Section at a mid-night supper at the hotel. Some of the party slept at the hotel until the boat left in the morning, but others went on board when the steamer arrived about 2 a.m. The management of the mill showed every attention to their visitors from afar and the stop at Ha! Ha! Bay was greatly enjoyed by the whole party.

On another page will be found a description of the wonderful scenery and some interesting points on the trip from Montreal to Chicoutimi and return which was enjoyed by the Technical Section in connection with the summer meeting, 1919. There is possibly one chance in Canada for a more extensive trip although hardly a more enjoyable one, and that is to visit the mills on the Pacific Coast of British Columbia. That is an event to look forward to and to hope for, and such a trip would be one of the finest things for binding together all the East and the West of our industry and would give many members of this section a broad knowledge of the wonderful country in which these mills are situated.

While the number attending the summer meeting this year is not as large as had been hoped for, yet the general opinion is that it proved to be one of the most successful and certainly one of the most enjoyable meetings that has ever been arranged so far. The following members were attendants and some of them were accompanied by their wives:

George Carruthers, Interlaké Tissue Mills, Ltd., Toronto; John Stadler, R. W. Arveson, Fred Barnes, and F. F. McHenry, Belgo-Can. Pulp & Paper Co., Shawinigan Falls; E. B. Slack, Riordon Pulp & Paper Co., Hawkesbury; J. J. Harpell, Pulp & Paper Magazine, Ste. Anne de Bellevue, P.Q.; Paul E. Buss, formerly, Provincial Paper Mills, Milles Roches, Ont.; L. S. Tuck Chas. D. Waters, H. Munro, and John S. Bates, Price Bros. & Co., Ltd., Kenogami; Walter J. Ray, Price Bros. & Co., Ltd., Quebec; A. G. Durgin, and L. H. Shipman, Spanish River Pulp & Paper Mills, Ltd., Sault Ste. Marie; H. J. C. Chapman, R. W. Hovey and G. S. Wilson, Abitibi Power & Paper Co., Iroquois Falls, Ont.; Ross Campbell, American Writing Paper Co., Holyoke, Mass.; W. B. Campbell, Process Engineers, Montreal; H. O. Keay, Paul G. Woodward, and J. J. Brennan, Laurentide Co., Ltd., Grand Mere, Que.; E. P. Cameron, Forest Product Laboratory, Montreal; C. K. Andrews, Itasca Paper Co., Grand Rapids, Minn.

#### NEWSPRINT SERVICE BUREAU MEETS IN MONTREAL.

The quarterly meeting of the Newsprint Service Bureau will be held in the Ritz-Carlton, Montreal, at 10 a.m., August 12. The familiar figure of the late G. H. P. Gould, will be missed this year, but a large attendance is expected. An address will be given at the luncheon by B. K. Sandwell, editor of the "Financial Times" on "The newsprint industry and its relation to certain economic problems."

Plans have been made for the Bureau to take the trip up the Saguenay to the Kenogami mills of Price Bros. & Co., following the trail of the Technical Section trip last week. Several members are to be accompanied by their wives on this enjoyable outing.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-14. Tearing resistance of paper.** Sidney D. Wells, paper. E. Arnould. Paper, **24**, (1919), No. 15, page the tearing strength of different samples of paper was made in which the instrument used consisted of the Schopper tensile tester slightly modified for the purpose. The results obtained indicate that the tearing test furnishes valuable data from which to judge the strength of a paper. While the Schopper tensile tester may be used satisfactorily, a smaller, cheaper and better instrument for the purpose should be devised.—R. B. Roe in C. A.

**A-14. K-7. How to determine the composition of paper.** E. Arnould. Paper, **24**, (1919), No. 13, page 62-64. Second paper in series, taking up the correction of mistakes in the beater room. See abstract, Pulp & Paper, **17**, No. 25, p. 584.—E.K.M.

**E-2. Water pollution and fish life.** Victor E. Sheldford, J., Am. Water Works Association, **5**, 437-7 (1918.) Pollution of water with manufacturing wastes and sewage not only decreases our fish resources but prevents their easy recovery. Investigation as to the relative toxicity of these wastes to fish in various stages of growth, the nature of the polluting substances and their removal is urged. D. K. French, in Chem. Abs.

**E-2. Coating wooden receptacles with waste sulfite liquor constituents.** G. T. Bloom, U. S., 1,291,696, Jan. 14. The inner surfaces of wooden receptacles are coated with concentrated waste sulfite liquor or sulfite pitch of a specific gravity of approximately 1.18, which has not been neutralized. The partly dried coating thus formed renders the vessels suitable for holding oils.—Chem. Abs.

**E-2. Alcohol from sulphite waste liquor.** Prof. Ralph H. McKee. Paper, **24** (1919), No. 15, page 34-36. Yeast will not grow in the raw sulphite liquor and it has been thought that this was due to sulphur dioxide and sulphites being yeast poisons. Yeast organisms require the presence of oxygen for their growth. This is furnished by blowing air through liquor. The yields of 95 per cent alcohol vary between 0.55 and 1.35 per cent calculated from the volume of sulphite waste liquor. Cost data given based on a 100 ton plant.—E.K.M.

**E-2. Alcohol from waste sulfite liquor.** Vernon K. Kriebel. Paper, **23**, No. 23, 753-62 (1919.) An analysis of 12 representative Canadian sulfite liquors showed that the best samples contained as much sugar as European liquors and should yield at least 1% by volume of ethyl alcohol. A description of the analytical methods used is given. The liquors examined fall into two classes, in which 28 and 20% respectively of the organic matter is in the form of reducible sugars. The difference is not due to the relative proportions of spruce or balsam, to the strength of the cooking, nor to the incomplete hydrolysis of the polysaccharides, but to the destruction of sugar in the cook. The experimental results further showed that: (1) the amount of sugar does not reach a maximum; (2) most of the sugar is produced before the end of the 7th hour; (3) the temperature after the 7th hour is most import-

ant; the yield being materially reduced if the temperature exceeds 145°; (4) the fermentable sugars are the first to be destroyed.—R. B. Roe, in C.A.

**E-4. Requirements of a good cooking acid.** W. E. Byron Baker. Paper, **23**, No. 23, 764-78. A full description of the methods of analysis of the cooking acid used in the preparation of sulfite pulp. Various sources of error are pointed out, and there is a discussion of the methods of standardization of the volumetric solutions used.—R. B. Roe in C.A.

**F-5. K-4. Making cellulose from cotton linters.** Joseph H. Wallace. Paper, **23**, No. 23, 634-42 (1919.) A description of cotton purification at the Government explosive plant, Nitro, W. Va.—R. B. Roe in C.A.

**K-4. Notes on the cooking of rags.** C. Negri, Pulp & Paper Magazine, **17**, No. 28, p. 573 (1919.) It is claimed that soda ash removes fats, resins, and sizing well but has only a feeble action on colors. Caustic soda has a more pronounced action on colors. Lime forms insoluble soaps difficult to remove from the fibre. The use of lime and soda ash together is deprecated as causing calcium carbonate to be deposited on the fibres. It is concluded that the slight difference in cost between using lime and caustic is more than compensated for by the improved product obtained.—R. C.

**K-4. The suitability of second cotton linters.** Otto Kress and Sydney D. Wells. Paper **24**, (1919), No. 15. Cotton shavings can be successfully pulped by the soda process yielding a high quality of pulp. For 100 lbs. of bone dry shavings using a maximum digester pressure of 100 lbs. and using 12 lbs. of caustic soda the operation will be completed in a total digester period of four hours. The yield will be about 70 per cent, and the bleach consumption to bring the pulp to a good white color will not exceed 4 per cent calculated as bleaching powder with 35 per cent available chlorine. The pulp loses considerable fibre by washing with the churn washer in the beater so that the yield of paper from shavings showed a final figure of 55 per cent. Cotton linters will require 9 lbs. of caustic soda at a digester pressure of 100 lbs. with a cooking time of 4 hours giving a yield of 90 per cent of bone dry pulp. The washing and bleaching losses, etc., will reduce the yield of paper to 70 per cent based on the raw linters. Hull fibre can be successfully pulped with 18 lbs. of caustic soda with the steam pressure at 90 lbs. from three to four hours giving a yield of from 68 to 75 per cent, of bone dry pulp. The pulp can be bleached with from five to eight per cent, of standard bleaching powder and the washing and bleaching losses, etc., are such that a production of from 47 to 51 per cent of paper may be obtained based on the original raw fibre. The main difficulty experienced in all the pulping trials was the complete removal of the hull fragments by digestion without injuring the fibre. The chemical consumed during the pulping of shavings and hull fibre is mainly required for the reduction of the hull fragments. Some of the fragments might be removed by passing through a paper duster. From experimental data there seems to be no reason why high grade stock cannot be produced from the second cut cotton linters, shavings and hull fibre.—E.K.M.

**R-9 British regulations as to the importation of paper.** Pulp & Paper Magazine, 17, No. 27, p. 531, (1919).—R. C.

### COMMITTEE INVITES CRITICISM.

On July 17 the outlines of several sections of the text-book on Pulp and Paper Manufacture that is being prepared by and for the mills of North America were published in Paper and The Pulp and Paper Magazine. Two more are published this week and a prompt response from anyone who has any suggestions or information will be appreciated.

#### The Coloring of Paper.

##### 1. Pigments—

General characteristics. Advantages and disadvantages. Brief description of more important pigments such as chrome yellow, red oxide, etc.

##### 2. Vegetable Dyes.

General description of vegetable dyes and lakes as prepared from them and used during the war.

##### 3. Aniline Dyes.

General discussion of the advantages and disadvantages of the aniline dyes. Terminology. Dilution. Adulteration mixtures, etc.

##### 4. Classification of Aniline Dyes.

Classification of aniline dyes into basic, acid, substantive and pigments giving the general characteristics of each of these classes.

##### 5 General Notes on Coloring.

##### 6. Identification of Dyestuffs.

The identification of classes and individual dyestuffs. Dye testing for strength and shade. Description of laboratory equipment required. Methods of making the tests.

##### 7. Matching of Shades.

##### 8. Description of the individual dyes giving their

general properties and application. This part has not as yet been prepared as am awaiting information from the dye manufacturers as to the trade name to be adopted by the different concerns for the identification of their product. For example, Cotton Black E Extra as sold before the war by the Badische Company is now sold under the name of Pontamine Black by the DuPont Company also under the name of Erie Black by the National Aniline and Chemical Company. The same dye is probably being put on the market by other manufacturers under various trade names. All the products, however, correspond in quality and method of application to the old pre-war cotton black. A list of the more important American dyes under their special trade names should be included in this chapter.

#### Paper Finishing Operations.

##### Finishing of Machine Dried Paper.

Purpose of Finishing: Cutting and rewinding (re-reeling); purpose.

General description of machines: Cutters; cutter and slitters.

Operation: Mounting reels; No. of reels; adjoining the cut; trimming; catching the paper; ordinary way; automatic layboy; mechanical; hydraulic.

Machine efficiency: Labor; speeds (separate control); life of knives; No. of sheets; broke; drive; power consumption; special cutting machines; angle cutters; duplex.

Safety.

##### Super Calenders.

Purpose: General description; types of rolls; operation; drive; threading in speed; operating speed; electric and shaft drive; feeding; starting and stopping.

Pressure.

Moisture of paper.

Temperature of rolls.

Machine Efficiency: Effect of dirt; grinding of rolls; speeds; power consumption; care of rolls; labor; broke.

Safety devices.

##### Plating.

Purpose: Different finishes; general description of plating operations; making up of forms; plating machine; operation of machine; pressure; times through; construction of forms; drive; labor.

Machine Efficiency: Broke; static charge; effect of moisture on finish; life of linen; preparation of linens; preparation of zines; power consumption; feeding and moving paper from plater girls.

Special Finishes: Cardboard; burlap; paper finish; lawn and linen; plate glossing.

Mechanical Plating Machines: Embossing; oscillating machines; belt machines.

Safety.

Trimming: Purpose; general description of machine; undercuts; overcuts; operation; drive; life of knives; life of sticks; No. of cuts; production; power.

Safety.

Sorting and Overlooking: Purpose; dirt; wrinkles; tears; holes; operation; supply of paper; production.

Counting: General description; operating; production; counting with sorting.

Sealing, labelling and packing.

Loft Dried Papers: Differences between loft dried and machine dried; strength; finish; surface; furnish; preparation of loft dried paper for finishing operation; conditioning; curl; moisture; heating.

Description of Ovens: Description of operation; temperature; time; effect on dye; production.

Sheet Calenders and Breakers; Purpose; bonds and ledgers.

Description of Machines: No. of rolls; material of rolls; pressure.

Operation: Feed; temperature; speed; drive; dampener; labor; production; broke; supply of paper; effect on strength; power.

Safety.

Special Machines.

Friction Glazing Calender.

Pasting: Purpose: The pasting machine; web and sheet; operation; paste preparation; operation of pasting two or more sheets; pressing; hanging; labor; broke; production.

Ruling: The ruling machine (disk and pen); labor; production.

Folding: The folding machine.

Transportation: Finishing room layout; storage between operation; transportation by truck; hand; electric; platform trucks; chain conveyors; belt conveyors; gravity conveyor; floor; labor; broke. Atmospheric conditions: Light; heat; humidity control.

Control of product: Testing; sampling.

Store House: Condition; manner of keeping stores.

Routing for Finishing Operations: Purpose; standardization of process; speeds of machine.

# UNITED STATES NOTES

A newsprint shortage, and conditions approximating those of 1916, if not worse, are declared to be imminent unless newspapers of the United States take immediate and drastic steps to economize in the use of their paper. This warning is published in the current issue of the "Editor and Publisher" and is based upon opinions expressed by newsprint and publishing authorities and upon reports on production, consumption and supply issued by the Federal Trade Commission. "The predicament next time," says the "Editor and Publisher," "threatens to be one of supply and not of price—from which money can buy no relief for the unfortunate." It appears that more newsprint paper is being used at the present time in the United States than ever before in history, while production has increased less than six per cent. This margin is far more than wiped out by vast exports to Australia and eastward to Europe of paper than last year, because of the war, was available for domestic use.

In the bill recently introduced in Congress to repeal the Canadian reciprocity act, wood pulp and flour are products excluded from the scope of the proposed repeal measure. Representative Young of North Dakota, who filed the report from the House with the committee favoring the repeal of the Reciprocity Act, explained that provisions of the bill affecting wood-pulp and wheat which are actually in operation, were re-enacted in the Underwood tariff law, and hence are not affected by the repeal bill. The effect of this bill is to take off the statute books the measure which never was operative, because of the failure of Canada to enact similar legislation.

That manufacturers of paper yarns in Germany do not intend to abandon the production of these materials but intend to offer them for export as well as for domestic trade is indicated by information received in Washington. Some of the best known German firms have undertaken the manufacture of the yarn by a new process known as "Zellulon," with cellulose as a raw material. It is said that Zellulon yarn will be a serious competitor of jute, hemp, flax and other similar fibres.

A loan of \$1,500,000 in 7 per cent gold bonds maturing in ten years was floated recently by the American Strawboard Company. Through this loan the company has obtained needed working capital which will enable it to carry on much more extensive operations.

Ground has been broken for the erection of the new pulp mill projected by the National Pulp Corporation on the north bank of the Westfield River, Westfield, Mass. Plans have been prepared for a mill with a capacity of producing 100 tons of pulp daily. When completed, it will be used mainly for the operation of the corporation's process of reclaiming waste paper.

Owners of timber lands and particularly paper manufacturers with extensive pulpwood tracts in Northern New York are more or less disturbed over a scheme of taxation on such property now being worked out by the Internal Revenue Department of the United States Government. A plan to value all forest and timber lands as of March 1, 1913, does not meet with approval. A voluminous questionnaire bearing on the matter has been sent by the Internal Revenue office to leading forestry and paper manufacturing men, and

with it has gone an announcement that the country is to be divided into districts and that committees of the lumbermen are invited to meet representatives of the department for a discussion. Although few owners are as yet aware of just what the proposed system involves, they are alive to the situation and are preparing to follow it up actively.

A statistical table compiled by Jason Rogers, publisher of the New York Globe shows that the newspapers of New York City, including Brooklyn, have grown to the extent of about 50,000 columns during the first six months of 1919 as compared with the same period of 1918. The total number of columns, reading and advertising, run the first half of 1918 was 447,732.

## EXPRESS RATES HIGHER—OCEAN FREIGHTS UNCHANGED.

Mr. G. P. Ruickbie, of the Freight Rates Department of the Canadian Pulp and Paper Association, sends the following communication to the Pulp and Paper Magazine:

The following Canadian Pacific sailing list, dated August 1st, giving particulars of steamer sailing from Montreal. No change has occurred in the freight rates available during the last week, nor does there seem to be any prospects of a reduction in the near future. I now understand that all bookings on boats belonging to the United States Shipping Board are being arranged through D. C. Dumeau & Co., Coristine Building, Montreal. This, of course, refers only to such of their boats as are being loaded at Canadian ports.

The Railway Commission has rendered judgment in the application of the Express Companies of Canada for an increase in express rates. The judgment, which is a lengthy one, allows increases in express rates on ordinary merchandise approximating 40% in Eastern Canada. Special commodity rates heretofore applicable on books, periodicals, commodity rates heretofore applicable on books, periodicals, etc., by express, will be cancelled, and in future such shipments will have to pay the regular merchandise rates.

It is a very common annoyance for belts to run off from one side of the pulley. This is usually caused by: (1) One or both of the pulleys being more or less conical when the belt runs to the high side. The only remedy for this is to cut down and true up the face of the pulley. (2) Frequently the shafting is out of true, or not parallel and in line. In this case the belts run off at the side where the shafting makes the nearest approach together. The obvious remedy is to set out the hangers or journals at one end, or set them in at the other till they are parallel. This may be ascertained by placing sharp tacks or pins in a long strip of light wood, fitting them into the centres of the shafts at both ends, and observing how much they differ.

Are we giving our best efforts to the country, or do we think that because the war is over we can take life easy? Prosperity is up to us. Keep the wheels turning.

# PULP AND PAPER NEWS



The Toronto Carton Club held a very successful luncheon recently at the Golf Club in Galt where the members were the guests of the Galt Paper Box Co., and a most pleasant and instructive outing was enjoyed. There were some seventeen present from Toronto and Galt, as well as representatives from London, Kitchener and Stratford. The next luncheon of the Toronto Carton Club to be held outside of the city will take place in London on Tuesday, September 9th. The event is being looked forward to with interest.

There has been issued, in neat booklet form, copies of the Trade Customs, book and litho papers and also Trade Customs writing papers. The editions, which are published by the Canadian Pulp and Paper Association, have been brought up-to-date. Being printed separately, instead of together as formerly the convenience of the new arrangement is much appreciated. It would be an advantage in the future to have the booklets uniform.

N. L. Martin, of Toronto, secretary of the Canadian Paper Trade Association, reports that the affairs of the organization are in excellent shape. Recently Mr. Martin had a call from a large English buyer of paper who reported that he had interviewed many manufacturers of paper in Ontario to make purchases for Old Country shipment, but was not able to place any orders for immediate delivery. The plants were all too busy to accept foreign consignments, which speaks well for the general prosperity of the trade.

J. M. Finlay, secretary-treasurer of Ritchie and Ramsay, coated paper manufacturers, Toronto, is spending his holidays at Endiang, Muskoka Lakes.

F. L. Ratcliff, President of the Ratcliff Paper Co., Toronto, and wife, have returned after spending an enjoyable vacation at the Royal Muskoka Hotel, Muskoka.

Among the callers on the trade in Toronto during the past week were W. B. Frederick, of Rochester, representing the Diamond State Fibre Co., Bridgeport, Pa., and A. L. Herts of the Liberty Paper Co., New York, manufacturers of gummed sealing tapes and tape moisteners.

Arthur Hobson, who was for some five years, on the staff of the Toronto Paper Mfg. Co., Toronto, previous to enlisting as a gunner for overseas service with the 22nd Battery Canadian Field Artillery, is once more in the paper game. He has taken a position with the Toronto Paper Mfg. Co., as a member of the selling force.

Albert V. S. Pulling, B.Sc. in Forestry of New York State College, who has been engaged in practical forestry work in New Hampshire, has been appointed Dean of the Forestry School of the University at Fredericton, N.B., and comes highly endorsed for the new post.

R. F. Jennings of the Ratcliff Paper Co., Toronto, accompanied by his wife, and family, is spending his vacation at Pleasant Point, Ont.

James Whalen, who is Chairman of the Whalen Pulp and Paper Co., Vancouver, recently arrived in that city from the East, and left on an inspection of the com-

pany's plant at Mill Creek. Mr. Whalen, who is the pioneer in the pulp business on the Coast and the founder of the company which bears his name, retained the office of Chairman under the reorganization recently effected by which Sir George Bury became President and Chief Executive of the concern.

Good progress is being made on the construction of the new buildings of the Vegetable Parchment Paper Co., in Merritton. The brick work is now going ahead rapidly and the new industry, for which the machinery has been ordered, will be in running order this fall.

The plant of the Cape Breton Pulp and Paper Co. at St. Ann's, Victoria County, is very busy at the present time and about three hundred men are employed. The company is looking for additional help. A large new barking drum is being installed. Gangs of men are at work taking out large quantities of pulp wood and making roads in order to facilitate the movements of the motor trucks, which will deliver the product to the pulp mill. Shipments of pulp have been made by steamer to several points in the United States and it is the intention of the directors to erect eventually a paper mill, which will convert the raw material into the finished product.

Work will start shortly on the new pulp and paper mill of the Spruce Falls Pulp and Paper Co., at Kapuskasing, Ont. The capacity of the plant will be about two hundred tons daily. The contract for the construction work has been awarded to Morrow and Beatty, Limited of Peterborough.

The plant of the Beaver Board Companies at Thorold, will shortly be enlarged and about a quarter of a million dollars expended on extensions, which will practically double the output of the firm.

The Laurentide Co., in accordance with their policy of providing good housing accommodations for all employees, are erecting three houses at logging headquarters at La Tuque, Que. The houses will contain eight rooms each, one being for the assistant superintendent and the other two for member of his staff.

A charter has been granted to St. Omer Lumber, Limited, with headquarters in Quebec city and a capital stock of \$70,000 to manufacture and deal in lumber, pulp wood and wood products, and acquire timber limits and licenses. Alfred P. Boisseau is one of the promoters.

A Provincial Charter has been granted the Sucker Timber Slide Co., with a capital stock of \$15,000 and headquarters in Port Arthur. The object of the company is to construct slides, piers, booms and other works necessary to facilitate the transmission of timber now in Sucker Creek in the unsurveyed area lying immediately west of the township of Hele in the district of Thunder Bay, from a point where the Creek enters the Black Sturgeon River to Sucker Lake, a distance of 17½ miles, and also the construction of a dam at Sucker Creek and a dam opposite the property of the Port Arthur Pulp & Paper Co., at a point 11 miles

through the entrance through into the Ottawa-Surgeon River, with all the powers authorized by the Timber Slide Companies' Act.

Pioneer Paper Products, Limited, Sarnia, have been incorporated to manufacture and deal in paper made from any material including manufactures of pulp, straw board and other similar products; also to manufacture and deal in lumber, boxes, barrels, and all other articles manufactured from wood. Capital \$50,000.

North American Fiscal Corp., Limited, Toronto, have recently been incorporated. Among the powers conferred on this company are to acquire timber limits or licenses and to manufacture and deal in lumber, logs, pulpwood, or any article made in whole or in part from wood; also to construct, repair or acquire vessels, boats, tugs, etc. Capital \$50,000.

The Motion Picture Bureau of Ontario has released through Regal Films, Limited, three copies of "The Story of Paper," featuring the manufacturing of newsprint from the forests of Northern Ontario.

A large number of paper firms are still feeling the handicap of the teamsters strike in Toronto. While quite a few jobbers have their own facilities in unloading cars, others have to depend on outside sources, which are not always available.

In the Abitibi, P.Q., region there are now fifty saw mills completed and another four are in course of construction. At La Reine, six mills are completed; Dupuy, 3; La Sarre, 6; Macanie, 6; Authier, 2; Privat, 4; Launay, 1; Trecesson, 2; Daquier, 1; Fignery, 1; La Motte, 1; Amos, 5; Landrienne, 2; Barraute, 2; Courville, 1; Semeterre, 2; Doucet, 2. It is estimated that during next season 60,000,000 feet of lumber will be produced in this region. The Quebec Government has spent large sums in developing the district.

Clyde Leavitt, chief forester for the Railway Commission, is at present at his cottage at Meach Lake, recuperating from his recent operation. He is getting along very well, but does not expect to be back in the office for at least another month.

The Canadian Barking Drum Co. are installing another American barking drum for the Port Arthur Pulp and Paper Co., and Fibre Making Processes are installing two for the new sulphite mill of the Flambeau Paper Co.

**PREPARING PULP AND PAPER EXHIBIT.**

An exhibit of unusual interest is being prepared by Mr. W. B. Stokes of the Forest Products Laboratories of Canada for the Toronto National Exhibition, which opens in Toronto in August. The display is being made on behalf of the Canadian Pulp and Paper Association, and the Forest Products Laboratories, Department of the Interior, and it promises to be the most complete and unique of its kind ever assembled. While it is not possible to divulge the details of the exhibits in preparation, it is learned that they will include the various processes of making pulp and paper, as well as the by-products of the industry. It is hoped that all the pulp and paper mills will lend what aid they can in supplying any of the needs for such exhibits and that they will get into immediate touch with the Forest Products Laboratories if they have anything that might be added to the display exhibits now under way.

Bronze beater-knives are not uneconomical on account of their high price, for in contradistinction to steel knives, they still possess a considerable value for a long time after being worn out. In addition, bronze knives prevent white pulp becoming grey.

**GOOD REASONS FOR DECREASED EXPORTS.**

Canadian exports of paper, pulp and pulpwood for April, 1919, the first month of the new fiscal year, reached a total value of \$5,598,128, as compared with \$6,323,635 for the corresponding month of 1918, showing a decrease of \$725,507. Paper exports alone made a gain of \$473,186. The new classification adopted by the Dominion Bureau of Statistics shows that the month's exports of newsprint, the leading paper staple, amounted to 920,592 cwt., valued at \$3,160,318, compared with 951,375 cwt., valued at \$2,790,158, in April, 1918, indicating a smaller quantity exported this year, but at a higher price.

Exports of both chemical and mechanical wood-pulp fell off this year as compared with last, the former by \$926,508 and the latter by \$266,230. Exports of pulpwood also fell off by \$5,955. The details are as follows:

	1918.	1919.	Increase or decrease.
Mouth of April.			
Paper.	\$3,157,052	\$3,630,238	+\$473,186
Woodpulp chem.	2,047,498	1,120,990	— 926,508
Woodpulp mech.	483,941	217,711	— 266,230
	\$5,688,491	\$4,968,939	— \$719,552
Pulpwood	635,144	629,189	— 5,955
	\$6,323,635	\$5,598,128	— \$725,507

Two explanations are forthcoming as to the decrease in pulp exports. The first is that the American demand fell off in November as soon as the war stopped, a number of the board mills closing down and some of the American pulp mills previously diverted to war manufactures resuming their output of pulp. The decline in the demand for Canadian pulp from these causes reached its climax in April and since that month the tendency has been reversed and exporters now report the demand equal to this period of a year ago.

The other explanation given is that some large American producers found themselves over-stocked in the first three months of this year and marketed their product at the 1918 price, to the disadvantage of the mills selling at the higher prices prevailing this year.

The decrease in the export of groundwood is regarded as without significance, the American demand fluctuating with varying conditions, such, for instance, as the water supply at the American mills, which was favorable to home production in April.

The exports of paper in April, 1919 were divided as follows: United Kingdom, \$121,317; the United States, \$2,974,048; other countries, \$534,873. Exports to the United Kingdom show a slight falling off as compared with April, 1918, the other classifications showing an increase. Next to the countries named Australia was Canada's best customer for paper, exports to that country reaching a value of \$330,488 for the month, New Zealand coming second with \$53,957.

Our chief pulp exports went to the United States, Great Britain, Japan, and New Zealand in the order named. The United Kingdom imported from Canada 94,509 cwt. of groundwood, valued at \$36,233 during the month. Later returns will show a great increase.

**FAIRY STORIES AND PAPER MAKERS.**

Agnes (aged 8, a papermaker's daughter): "Mother, dear, is it true that all fairy stories begin with 'Once upon a time'?"

Mother: "No, Agnes, some fairy stories begin, 'We are busy at the mill to-night'."—Selected.



### CANADIAN TRADE CONDITIONS.

Toronto, August 4.—All paper plants continue busy and prices in every line are very stiff. A good indication of the activity of the trade is that nearly all the jobbers report business has, since the first of the year been running considerably ahead of the corresponding period of 1918. While orders in the main are not so large they are more numerous and deliveries are reported to be fair. Stocks on the whole are not heavy. Coated paper plants are very busy and if the present rush keeps up, some of them may have to turn down orders. The recent raise of half a cent has not had an appreciable effect in lessening the bookings, and one cause of the advance was the shorter hours, higher wages and other overhead expenses.

Just now in many lines of paper there is an abnormal demand with production not equal to the calls made upon the mills. However, conditions will properly adjust themselves in time. Domestic requirements will all be taken care of as expeditiously as possible. Book and writing mills are rushed and the scarcity of newsprint is not being relieved to any extent.

There has been an advance of one to two cents on all parchmentine and glassine papers. Everything betokens considerable increase in other lines during the fall and no longer are representatives of American mills to Canada looking for business at cut rates. They have plenty to attend to at home. The labor situation is improving and there will be more pulpwood taken out this fall than there has for some years past, in order to meet the exigencies of the situation. One concern, which was recently formed in Quebec to deal extensively in pulp wood, will take out several thousand cords of peeled wood, and the price, f.o.b. cars, is fourteen dollars for peeled spruce.

A recent report issued by Temiskaming and North-ern Ontario Railway shows that there was considerably less than half the volume of pulpwood shipped in May that there was during the previous month, amounting to 5,573 cords or a decrease of 55.3 from April. In wood pulp there was shipped in May by this road 579

tons or some 187 less than in April last, but paper shipments reveal an increase of 865 tons, being 6,856 in May or a gain of 14.4 per cent.

The twine situation, which eased off shortly after the armistice is growing stronger all the while and during the past few weeks there has been an advance of about five cents per pound on finished and unfinished cotton twines, which are now very high in price with deliveries to jobbers away in arrears. Jute twines have also been advanced to the dealers by about five cents a pound, but deliveries in this line are better. All kinds of board are in brisk demand and an increase in price is looked for in the near future.

In regard to the rag and paper stock market, waste paper is active in every department. News is not so strong but mixed papers and white cuttings are booming and all grades of manilla are in excellent demand. There is a big call for white blanks and ledgers and prices have increased all along the line. The requisitions for new cotton rags continues brisk, particularly for white shirt cuttings and white hosiery cuttings. Roofing rags are still high although the inquiries from the mills are not quite so frequent as a few days ago.

In calling upon the government to protect the timber wealth of the country and particularly the pulp wood supplies, a Port Arthur paper says that the war revealed the really disparate condition in which many of the mills in the United States found themselves, and that the wood from Canada is keeping them alive today. The North holds the situation in the hollow of its hand and the question for the government to decide is, whether it is better to take all there is in the trade or be the simpler hewer of wood. The article goes on to state: "The question must be settled and settled in the true interests of the North country, which is in the interest of the province as a whole. The answer must not be left until the forests are depleted as was the case with the white pine, but must be answered now when there is yet time to establish the paper business on the basis which our resources warrant. Surely we may look for assistance in this matter from eastern papers." The same matter was recently called attention to by J. A. Bothwell, President of the Canadian Pulp and

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ket.

Paper Association) who states that for every one and a half cords made into paper in Canada one cord is shipped to the United States, and the moral is that the Dominion must continue the restrictions imposed upon the exportation of pulp wood and to enjoy the full benefits of our heritage must apply them more intensely.

This is one of the big questions which will figure sooner or later in Canadian national development and the fear is that if any drastic action is taken to prevent the exportation of wood from freehold lands, Uncle Sam may retaliate by placing a ban on anthracite coal or adopt other reprisals. The paper interests in Canada are coming to the front, but not as rapidly and to the same extent as many would like to see. The subject is one worthy of every serious consideration and discussion.

**Pulp Prices.**

	F.O.B. Mill.
Groundwood pulp . . . . .	\$28.00 to \$30.00
Sulphite, news grade . . . . .	\$65.00 to \$70.00
Sulphite, easy bleaching . . . . .	\$85.00 to \$87.00
Sulphite bleached . . . . .	\$110.00 to \$115.00
Sulphate . . . . .	\$80.00 to \$85.00

**Rag and Paper Stock Prices.**

No. 1 white envelope cuttings . . . . .	\$4.00
No. 1 soft white shavings . . . . .	\$3.50
White Blanks . . . . .	\$1.25
Heavy Ledger Stock . . . . .	\$2.25
No. 1 magazine . . . . .	\$1.80
No. 1 book stock . . . . .	\$1.25
No. 1 manilas . . . . .	\$1.90
No. 1 print manila . . . . .	.75c
Folded news . . . . .	.70c
Over issue, news . . . . .	.5c
Kraft . . . . .	\$2.50
No. 1 clean mixed paper . . . . .	.60c
No. 1 shirt cuttings . . . . .	12½—13c
No. 1 unbleached cotton cuttings . . . . .	.11—11½c
No. 1 fancy shirt cuttings . . . . .	.9c
No. 1 blue overall cuttings . . . . .	.9c
Bleached shoe clip . . . . .	.91c
White cotton hosiery cuttings . . . . .	.13c
Light colored hosiery cuttings . . . . .	.91c
Now light flannelette cuttings . . . . .	.9c
No. 2 white shirt cuttings . . . . .	.9c
City thirds and blues (repacked), No. 1 . . . . .	.41c
Flock and satinettes . . . . .	\$2.90
Tailor rags . . . . .	\$3.00

**PAPER PRODUCTION MORE THAN LAST YEAR.**

Newsprint paper production in Canada for June shows an advance over June of last year amounting to 17,745 tons or over 5 per cent. Consumption keeps pace with production and all the mills both in the United States and Canada report unusually heavy demands.

While the price of newsprint supplied to Canadian consumers is still under Government control, and will be until peace is formally declared, and while the judgment of the Paper Control Tribunal, which is now expected any day, may revise the price downward so far as it applies to paper sold from July 1st to December 1st of last year, it will have but little effect upon the general situation, since the demand now exceeds the supply and wise paper-buyers, with an eye to the future when government regulations are withdrawn, are placing their orders for long periods in advance, irrespective of what the decision of the Tribunal may be or as to how it may affect prices for the remainder of the period during which government con-

trol will prevail. It will be recalled that several of the more far-sighted publishers, particularly some of those in Montreal, took this course early in the original proceedings. When the official price of newsprint in Canada was \$57 a ton, these publishers made long contracts for supplies at \$60 and when the price rose to \$69, as it did shortly afterward, they enjoyed an advantage of \$9 a ton over their more short-sighted competitors.

But whatever way the situation is looked at the indications all point to a higher price for paper as well as increased consumption which will more than keep pace with the increased output, says Financial Times.

Paper consumption during June was the greatest for that month in the history of the Canadian industry. Statistics just issued by the News-Print Service bureau of New York, show that the average daily production of newsprint for June amounted to 99.5 per cent of the average daily output during the three months of greatest production in 1918.

The thirty-nine companies reporting to the bureau produced 150,338 tons and shipped 151,741 tons during the month.

Production by United States mills during the first six months of 1919 was 32,145 tons, 6 per cent greater than during the same months in 1918. Canadian mills produced 5 per cent more, or 17,745 tons, than in 1918.

The United States mills shipped 1,175 tons less and the Canadian mills 12,063 tons more in the first six months of this year than in the corresponding period last year.

Stocks during June decreased 930 tons at United States mill points and increased 1,454 tons at Canadian mills making total stocks 525 tons more on June 30, 1919, than on May 31. The total of 35,424 tons on hand at all mills on June 30 amounted to about six days' production. The Canadian accumulations have since been depleted by overseas exports.

Statistics for June and the first six months follow

	<i>United States Mills.</i>		
	Production During Month.	Shipments During Month.	Stocks on Hand at all Points.
(in tons):			
1919 January . . . . .	98,555	95,936	23,450
February . . . . .	88,793	84,041	28,403
March . . . . .	93,868	88,556	29,587
April . . . . .	94,287	90,435	33,512
May . . . . .	83,265	92,576	24,219
June . . . . .	91,381	93,406	23,289
Six months . . . . .	550,149	545,040	.....
1918 Six months . . . . .	518,004	546,215	.....
	<i>Canadian Mills.</i>		
1919 January . . . . .	63,799	65,000	13,170
February . . . . .	58,954	60,483	11,943
March . . . . .	62,851	60,877	14,134
April . . . . .	64,285	66,280	12,401
May . . . . .	61,356	62,231	10,681
June . . . . .	59,557	58,245	12,135
Six months . . . . .	370,116	374,166	.....
1918 Six months . . . . .	353,057	362,053	.....
	<i>United States and Canadian Mills.</i>		
1919 January . . . . .	162,354	160,936	36,620
February . . . . .	147,747	144,524	40,346
March . . . . .	156,719	149,433	43,721
April . . . . .	158,572	156,715	45,913
May . . . . .	144,621	155,807	34,900
June . . . . .	150,938	151,741	35,424
Six months . . . . .	920,951	919,156	.....
1918 Six months . . . . .	871,061	908,268	.....



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### THE PRINCE OF WALES IN THE CORNISH CHINA CLAY-LAND.

The Royal visit to Cornwall on June 11th on the occasion of H.R.H. the Prince of Wales opening the Royal Cornwall Agricultural Society's meeting at Truro was a very memorable event, and the Prince was accorded a real Cornish welcome. Although no stop was made at St. Austell, the most notable clay-town in the world, the approach of the Royal visitors was heralded by merry peals from the historic church bells. The approach to the town and the main thoroughfare was



densely crowded with school children and loyal citizens, and the main street was adorned with flags and bunting by the business community. At all the villages through which the Royal Party passed the greatest interest and enthusiasm was displayed. After a very strenuous day at the show the Prince returned to St. Austell again toward evening en route to Bodmin, and in the accompanying photograph the Prince can be observed at the wheel passing through the china clay area at Higher Vinestones, near St. Austell. The Prince was greatly interested in the white wealth of Cornwall, and was more than delighted with the many china clay works he saw between St. Austell and Bugle on his return journey. It is understood that the Associated China Clays, Ltd., were desirous of arranging an official welcome on behalf of the industry generally, but the Prince had already consented to participate in so many functions on that day that he was unable to comply with such wishes.—W.T.

Those who heard or read Mr. Olivier Rolland's interesting account of his visit in 1914 to the paper mill of Montgolfier Freres may be interested in the announcement that Mlle. Gabrielle de Montgolfier was recently married to Viscount Du Pelouze de Saint-Romain, a lieutenant in the French artillery, who wears the Croix de Guerre. It will be recalled that a Montgolfier made the first successful balloon trip.

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W. F. B. Paterson and S. K. Smith, publishers of the "Business Review," St. John, N.B., have bought out the "Maritime Retailer," which has been published five years. The two papers will be merged under the name of the "Business Review" and the "Maritime Retailer," with Mr. Smith as manager.

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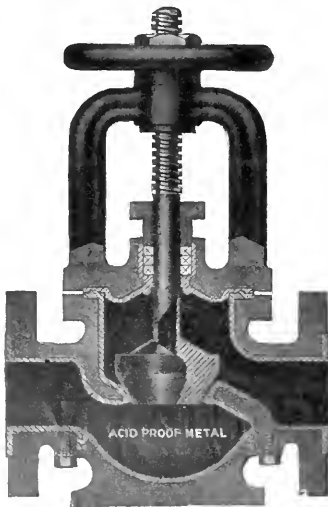
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### A CORNISH CLAY-WORKER, V.C.

The Cornish china clay industry and community generally have been honored by the distinction which Sergt. Horace Curtis of the 2nd Battalion of the Royal Fusiliers of Newlyn East, has secured in the service of his country. This gallant Cornishman, whose picture accompanies this sketch is seen returned to his old job breaking clay at the Meloder China Clay Works, belonging to Messrs. John Lovering & Co. of St. Anstell.



Sergt. Curtis commenced work in the clay works when he was 15 years of age and for over eight years previous to his enlistment was a valued employee of Messrs. J. Lovering & Co., and the firm are naturally very proud

of the great distinction conferred upon a member of their large out-door staff.

The official account of his conduct is as follows:— "For most conspicuous bravery and devotion to duty east of Le Cateau on the morning of October 18th, 1918, which in attack his platoon came unexpectedly under intense machine-gun fire. Realising that the attack would fail unless the enemy guns were silenced, Sergt. Curtis without hesitation rushed through our own barrage and the enemy fire and killed and wounded the teams of two of the German guns, whereupon the remaining four guns surrendered. Then turning his attention to a train-load of reinforcements he succeeded in capturing over 100 of the enemy before his comrades joined him. His valour and disregard of danger inspired all in his section to greater achievements. Although Sergt. Curtis could obtain less arduous employment, he prefers to be with his former colleagues in the clay-pit, and the cheerful expression which is quite characteristic of him proves that he is happy and content. Sergt. Curtis enlisted in September, 1914, and experienced his first engagement on landing at Suvla Bay, and afterwards went to Palestine and and subsequently to France.—W.T.

Writing to the "Canada Lumberman," a leading lumber manufacturer in Northern Ontario says that woods operations have been moving along fairly well. The lack of snow has not hurt work very much; the weather being cold enough to make ice. Labor conditions are not much better than they have been at any time this year, and logging costs will show an advance over 1918 of at least thirty per cent.

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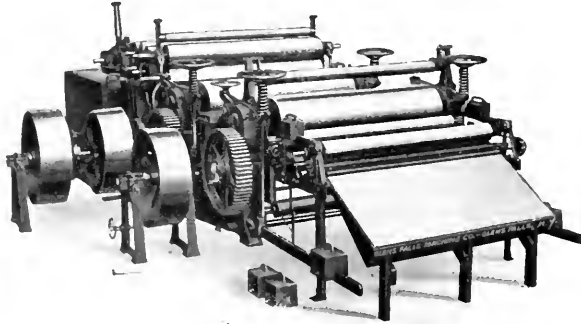
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# EDITORIAL

## CARGO SPACE FOR CANADA.

A despatch from London last Saturday reads:—"Pressure continues on the Ministry of Shipping for a larger Canadian share of eastbound cargo space. The points most strongly pressed include elimination of scrap steel cargoes, and the diversion from Canadian channels of goods originating from the United States. Even a small improvement will increase the amount of Canadian manufactured exports by many thousands of dollars."

Mr. Lloyd Harris and his office are doing good work for Canada's export trade eastward, but they cannot carry the goods. Ships are absolutely necessary. There are only a limited number of bottoms and the best use must be made of them. Freight traffic from Canada and the United States at this time simply enormous, and the strain on shipping is almost as great as in war time. In some ways it is greater, because during the war, many civilian needs were entirely sidetracked and told to wait. Likewise factories on this side either stopped manufacturing export goods or made munitions, for which transportation was assured.

One of the points in the appeal for more shipping space is that steel scrap cargoes be left on this side. It seems that this material is the residuum from Imperial munition manufacture and the British Government wants to realize on it. It is therefore being sent to England to be refined, re-cast, decarbonized, or used as a part of blast furnace charges. All of this can be done on this side, especially refining and the manufacture of special steels and ferro-alloys, for which our cheap electric power is admirably adapted. By leaving the scrap here, perhaps not so high a price would be realized, but our whole export trade is being bottled up for the benefit of a few more dollars on steel scrap, which apparently is not urgently needed in England, and which can be used in Canada to the advantage of a number of industries.

Many Canadian manufacturers have tons and tons of freight either made or potentially available if shipping space could be had. And it is material that England and Europe is in very urgent need of. Pulp and paper are not the only ones, but we honestly believe they are among the most important, both in view of present needs and future trade relations between Canada and the world.

As for the space occupied by American goods we are not prepared to express a full opinion, but it does seem a bit unfair to devote very much space to such goods when Canada has so few ocean lines and our neighbors are so well supplied. It must not be forgotten, however, that much Canadian material is shipped from Am-

erican ports and a reciprocal accommodation to a reasonable extent is not to be loudly denounced.

Not only England, but Europe, wants Canadian manufactures, not wastes. Industrial Germany will rapidly recover and expand. Germans and Scandinavians are quite properly getting into the race to the various markets in Europe and elsewhere. If we are going to be in it we must at least get on the track. This can not be done without ships. New construction is coming, but is slow. Now is the time to sidetrack unnecessary materials, especially government scrap, and get across the pond with every pound of goods that will help rebuild Europe and establish Canada fairly in those markets.

## AN IMPORTANT PROPOSITION.

There are two important factors in rendering a service. One is to be willing and the other is to have an opportunity. If the plan suggested by Mr. Shipman at the Technical Section meeting and reported in this magazine last week it put into effect, as it doubtless soon will be, there will be plenty of opportunities for service on the part of members of the Section.

The scheme briefly is this: Any member, whose mill wants information on a particular subject, as, for instance, the refining of groundwood screenings, will send a memorandum of the matter to the secretary. The secretary will then send out a questionnaire to all members for suggestions from their knowledge and experience. It is to be noted that members may have had experience in the matter referred to but have changed connections. The secretary on receiving replies, would compile them into a bulletin for the information of members and contributors would be asked to send duplicates of their communications direct to the inquirer, to save time. Those wishing to remain anonymous could communicate through the secretary. When advisable, the secretary (probably in consultation with the Committee on Publications) would authorize the publication of selected information in the official journal of the Technical Section for the benefit of the industry in general.

In many ways this is the most important proposition that has been considered by the Section. It was carefully gone over at the summer meeting and met with unanimous approval. Many fine pieces of work have been accomplished by standing and special committees, but this scheme is a plan whereby the Section becomes a committee of the whole as a special committee when the need arises. It is a splendid idea. Anyone who has served on a small committee knows

throughout it is to cover the ground thoroughly. Here is a way to get a widely extended collection of opinion and experience that should be a very great factor in eliminating mistakes in future developments of our industry in Canada and by increasing the extent of correct and successful practice, contribute to the success of the whole industry. The Association has already derived much benefit from the activities of the Technical Section. The development of this scheme will show that the possibilities for service have but only begun.

All this, of course, is assuming that members of the Section will co-operate when called upon. It is difficult sometimes to dig up data from one's old note-books and other records, seemingly for the benefit of some one else. These favors, however, will come home to roost, for the data so collected is placed at the disposal of every member, who not only has his own record in convenient form, but the accumulated wisdom of the Section at hand. Each one also has the privilege of submitting his problem to the whole Section. It is the biggest and best line of service yet proposed and we trust there is no member so selfish as to decline to co-operate to the fullest extent.

#### BRITISH INVESTMENTS IN ARGENTINA.

Referring to news reports alleging friction between Great Britain and Argentina due to extensive English investments in the latter country, the National Bank of Commerce in New York says that \$2,000,000,000 has been considered a conservative estimate of the amount of such investments.

"The close trade relations between Argentina and the United Kingdom," says the Bank, "are shown by the fact that for a long period almost one-third of the total imports into Argentina were received from Great Britain, to which one-third of Argentina's total exports were sent. The war has resulted in a small reduction in the amount of imports from Great Britain but exports to her show a tendency to increase."

This condition of the financial relations between Argentina and England might be conceived as holding possibilities of advantage to Canada. Argentina imports large amounts of newsprint. She ships large quantities of grain, meat and hides to England. England owes Canada money. Why not work a puss-in-the-corner game? Let Canada supply Argentina with newsprint and pay England with goods on Canada's account, England sending us the cash.

#### PULP AND PAPER EXHIBIT FOR TORONTO EXPOSITION.

The paragraph in our last issue referring to an exhibit in preparation at the Forest Products Laboratories of Canada contained some inaccuracies which we wish to correct. This exhibit is being prepared at the request of the Pulp and Paper Association to meet an emergency, and it will not be possible to make it even

an approximately complete exposition of the process of pulp and paper manufacture. In fact, at the time of writing all the materials for this exhibit have not been delivered.

We owe an apology to Mr. W. B. Stokes, who is responsible for this work that the paragraph referred to was published without his knowledge or approval.

#### COBWEBS.

From the many delightful messages from friends about that son of ours, we wish he were at least twins.

Appropos of the suggestion of one Mr. Williams that snakes are easily tamed and made pets of, the Laurentide "Digesteur" observes: "Perhaps in some parts of the world snakes might conceivably become popular, but in the United States, where Mr. Williams resides, and in Canada, the idea is hardly feasible. Certainly not in Grand'Mere. Chief of Police Blanchette and his men keep such vigilant watch upon the sale of beverages that getting the snakes would probably be a very difficult matter."

Customs figures for the Port of Montreal showed a huge increase in July, in spite of partial prohibition. If Jack Canuck can't have firewater, he will have the fire some other way, as shown by less spirits and more smokes.

The inauguration of the monthly Montreal-Havre service by the Cie Canadienne Transatlantique should be good news to pulp and paper men. We have received many requests from such firms desiring to make connections for machinery and pulp and paper. A good ocean service has been one of the points lacking. With more cargo space there should be a considerable increase in our exports to this very desirable market.

From reports of the coal situation in Great Britain due to the miners' strike, that old gag about "carrying coals to Newcastle" is no joke.

A letter from A. L. Dawe, who is now in London, states that the advocates of the idea are making progress with a scheme for a British Technical Association of the Paper Trade. That is good news.

"It's a hard come down," says Walter Pulitzer, "that the country that produced William of Orange should have to continue to harbor William the Lemon." —New York Evening Mail.

Pardon us for mentioning it, but the neighbors seem to be making a "stink" over that "old cabbage" smell around the Canada Paper Co.'s mill. The funny part of it is that Geo. H. Montgomery is acting for the plaintiff. Better go down to Windsor Mills, G. H., and get a whiff of that fine, invigorating, germ-destroying odor. There's nothing like it!

# The Industrial Possibilities of Water-Proofed Paper Products\*

By JUDSON A. DECEW, A.M.E.I.C.

The substitution of paper products for wooden products, which is gradually taking place is a development largely dependent upon the ability to make the paper products as strong and resistant to destructive agencies as the special product requires. Great strides have already taken place in this direction, in spite of the fact that the methods used in imparting the special properties to the paper products are yet in a relatively undeveloped state.

Owing to the increase in cost and lower quality of lumber now obtainable, there is a strong incentive to use the inferior woods and waste papers to make products that will replace the ordinary wooden products with which we are familiar. For example, pasted paper products are used extensively as boxes to replace the ordinary wooden box. Paper barrels are now made, by special machinery, by winding up and pasting a roll of paper into suitable cylindrical shapes and attaching heads to them. Paper pails are made by pressing wet pulp into a solid pail, or by winding the paper into a pail while pasting it together. Wall-board is a product which is made by pasting layers of paper together and which is used for walls, ceilings and interior finishing, in place of high grade lumber. The uses of this product will be greatly extended as soon as the methods of making it waterproof are sufficiently perfected to enable it to be used in places exposed to the weather. Pulp products are now made, in the shape of board, which are fairly water resistant and very light in weight, and these are used as insulating materials.

Waterproof papers have been used recently to a great extent in lining cases, where products are exported. One of these is made of two sheets of thin paper with a layer of pitch between them. Many papers are used either waxed or oiled, because the method of making paper waterproof on the paper machine are not yet sufficiently well known. Waxing paper is an expensive process for the original paper takes up from 10% to 40% of wax in the process, and the strength of the product is generally reduced about 20%. Oiled paper has a limited use owing to the difficulty of keeping the oil in the paper after it is put there. This paper is used a lot in the packing industry, but its uses are limited as it is an unpleasant product.

## Paper Cans.

Paper packages which have been waxed after being made are very familiar to all, but such packages are unsuitable for some uses. Waxed containers are not suitable for holding greases such as butter and lard. They are also unsuitable for canning, as they cannot be heated. During the late war there was a great demand for paper cans that could be substituted for metal ones, but a paper can that would stand the heating process, to which the metal can is subject, was not produced.

## The Engineering Features of Paper Products.

The engineering features connected with the future

development of paper products may be considerable, and it may be of interest to note some of the tendencies at the present time and the problems that affect their development.

During the rush period of the war, a large amount of the paper wall-board and plaster board was used in government construction for entonments and other temporary buildings. Perhaps some of the paper-board was, at first, improperly made or improperly used, but, if disappointment occurred, it does not follow that satisfactory fibre board products cannot be produced for these many purposes of construction. Paste board has some properties that make it desirable for special conditions.

Wall-board has also been used as a substitute for lumber when made into forms for concrete, and it may be used in constructions, not only to act as ceiling but also as the bottom of a concrete floor above. At the present time, manufacturers of wall-board seem to be content to develop the markets for interior use only, although it is known that a really waterproof product can be made, as a result of improvements in the present processes. Newer developments and applications, therefore, will follow the production of a standardized product, which will withstand the influences of the weather and which can be safely used by engineers for outside construction. There are manufacturers preparing, at the present time, to produce such a material, and, as it can be made from either ground wood or old paper stock, it is evident that there will be no limit to the possible production of lumber substitutes.

## Methods of Production.

There are three problems to be solved if it is desired to make the pasted board entirely waterproof. First, the paper, as it comes from the paper machine, must be made thoroughly water resistant by the use of special sizing materials, which are added to the pulp in the beating engine; second, these layers of waterproof paper must be pasted together by means of a water-soluble material, which becomes insoluble on drying; and thirdly, but of less importance, the surface of the pasted board may be coated with a water-resistant material. Some manufacturers do not attempt either to size the paper product or to use a waterproof binder, but depend entirely on a small amount of surface coating to retard the penetration of water, in the form of vapor. Other manufacturers do their best to waterproof the original paper product but, like all of the others, paste these layers together by means of silicate of soda, which is a strongly alkaline material, and the manner in which it is used injures the water resistance of the paper itself.

The use of surface coatings is more varied in practice but is limited in its application, owing to the fact that if waxy or oily coatings are applied to any extent then the product, when used for interior decoration, will not take the proper surface sizing before paint is applied.

Owing to the improvements in methods of waterproofing paper, by treating it before it is formed on the machine, and also the development of special organic products for pasting it together, which will be-

\*Read by the author before the Montreal Branch of the Engineering Institute of Canada on April 10th, 1919.

of its case on drying, we can now safely say that the problem of making a thoroughly waterproof board has already been solved and merely awaits the application of these processes which are now perfected.

With regard to the properties of this new board product, I may say that it is possible to make it sufficiently waterproof so that it will not absorb 20% of moisture after several hours immersion in water. This means that it will never take up sufficient water to weaken its structure so that it will fall to pieces and, consequently, will be a satisfactory substitute for lumber. We must remember, on the other hand, that lumber is easily wetted until it has doubled its weight by the absorption of water and that under these conditions it loses about 50% of its original strength. While absorbing this water it will expand considerably, and during the drying process will suffer considerable distortion. In considering the properties of paper board, therefore, we must compare it with the more or less unsatisfactory material that we commonly use, whose factors of distortion are greater than with the artificial product.

Painting does not keep lumber dry any more than it will be an absolute protection for a lumber substitute. In the manufacture of a paper product, however, it is possible to incorporate waterproofing materials into the fibrous mass so that the product, when dried on the machine, is exceedingly water repellent, which property does not exist in natural woods. In the artificial product the strength factor may be less but it will be subject to less variation under normal conditions.

#### Waterproof Paper.

There are many coming uses for a waterproof wrapping paper which is also strong and pliable in character. The greatest possibilities are in connection with the substitution for canvas and cloth. Such papers are already being made by treating specially strong paper with impregnating or coating materials. These paper products are, of course, expensive but this is due to the fact that valuable products and heavy coatings are required to make paper so that it does not take up any moisture at all. Paper which will hold water for many hours, and in this sense may be called waterproof, can be made on the paper machine and this may also be very strong and pliable in character.

A crimped paper that is waterproofed, by impregnation, and sewed into bags is very serviceable for many purposes and is already on the market in considerable quantities. A similar paper can be made, with like waterproof qualities, by special sizing materials incorporated in the paper stock during manufacture. Such a product, however, is not yet in general use.

#### Summary.

It is very difficult to make a paper product that will not absorb moisture and thus expand and contract to some extent. Paper and board can, without difficulty, be made so that it will resist the further penetration or absorption of water after its fibres have taken up a small quantity of moisture, equal to about one fifth its weight. The manufacture and use of these latter products should greatly increase as they are sufficiently waterproof for most commercial uses.

On July 30, the Grand Mere nine pulled a 7 to 6 victory from the visitors from Shawinigan Falls. At the beginning of the ninth inning the score was 6-3 against the home team. Grand Mere also won the bonus match from the down river town and the second team who went to the Falls also won.

#### FOUNDER OF WHALEN CO. VISITS THEIR PLANTS.

Sir George Bury, president; James Whalen, chairman of the board of directors, and Mr. Henning Holm, general superintendent of Whalen Pulp and Paper Mills, Limited, have just returned from an inspection trip to the company's plant at Mill Creek.

Mr. Whalen is on the coast on a general inspection tour of the company's properties and expressed himself as being very well satisfied with the progress being made. Mr. Whalen confirms the reports from the east that the pulp markets are stiffening and new fields are continually being opened. "The company's plants are undergoing some slight alterations," said the visitor, "which will improve the quality of the product, and with normal shipping conditions returning, an opportunity is opened to greatly expand the export markets for B. C. pulp, which in quality equals the product of any country in the world.

"Shipping facilities are, of course, of first importance, and British Columbia must develop its shipping and handling utilities. With the wealth of raw products in British Columbia, it should be a much larger manufacturing centre than it is at present, and with co-operation it should become one of the greatest provinces in Canada.

"British Columbia has the last big stand of timber in Canada, and it is the opinion of the large lumbering concerns in the east that sufficient attention has not been paid by the Pacific Coast mills to the development of export markets. Lumber has not increased in price in the same proportion as many other commodities, but the present outlook is excellent. The Pacific Coast mills must make a point of going after the business, rather than wait for the business to come to them."

Besides changes in management, the company is obtaining funds needed for expansion in proportion to their opportunities. The unsold balance of the \$1,500,000 first mortgage bonds recently authorized is now offered the public by Royal Securities Corp. It is an attractive proposition.

Pulp and paper exports to the Orient and Australia are showing very satisfactory growth and one in which the Whalen Company is sharing in increasing degree. The new financing will permit the Whalen Company to aggressively expand its activities to meet the growing demand for its products in both Canada and the United States, and also in the Orient, and in Central and South America.

#### NEW FREIGHT RATES FROM SEATTLE TO UNITED KINGDOM PORTS.

The U. S. Shipping Board has made new freight rates from Seattle to ports in the United Kingdom and Continental Europe, according to W. C. Dawson & Company, Puget Sound agents for the new line.

These rates will go into effect early in August and apply from San Francisco or Portland, Ore.

The rate on wood pulp is \$2.50.

Rates to French Atlantic ports are 25c higher, Christiania, Copenhagen and Gothenberg, 50c higher and to Stockholm 75c higher.

A monthly service will be inaugurated.

A. R. Roberts, lately of the firm of Burns & Roberts, Toronto, has severed his connection with the firm and opened offices under his own name at 201 Bank of Hamilton Building, Toronto. He will handle contractor's power plant and railway equipment.

## Reports of Technical Section Committees

The following are the reports of committees of the Technical Section of the Canadian Pulp and Paper Association read at the summer meeting July 29, on board the steamer "Murray Bay." Interspersed are some of the interesting pictures taken by L. H. Shipman and W. B. Campbell.

### REPORT OF COMMITTEE ON EDUCATION.

Your committee has satisfaction in reporting several interesting developments in educational progress, both in this industry and in general.

We again emphasize that progress in educational matters is of paramount importance with any other activity for welfare in industry, and we strongly urge all members to take critical interest in school work in their



In the Shadow of Eternity, the Grandeur of the Trinity is Seen Beyond. These Promontories in the Saguenay are Appropriately Named.

home communities. The control of schools must not remain in the hands of men whose sole idea in education is how the tax rate is affected.

First: *The Joint Committee on Textbooks* reports the following progress in a statement prepared the eighth of July by Mr. Stephenson:

"The following is a brief statement of the present status of preparations for the material to be used in the textbook which is to be published under the auspices of the Technical Association of the Pulp and Paper Industry and of the Technical Section of the Canadian Pulp and Paper Association.

It will consist of four volumes, each approximately of 500 pages, which will cover the topics as mentioned in

the following paragraphs, which will also give the name of the author and the approximate number of pages for each section, as far as can now be stated.

### Volume 1.—Preliminary Instruction.

Arithmetic by J. J. Clark, Seranton, Penn., about 150 pages, practically completed.

Mathematical applications (mensuration, special problems, etc.) about 100 pages, by J. J. Clark, practically completed.

Elementary Chemistry by T. L. Crossley, about 100 pages, more than one-third completed.

Elementary Physics, about 60 pages, by E. J. Graham, Hawkesbury, Ontario.

Mechanics and Hydraulics, about 60 pages, by E. J. Graham.

Elementary Electricity, about 60 pages, by J. S. Riddle, Grand Mere, Quebec.

### Volume 2. Preparation of Pulps.

Preface: Outline of the character of the work, and a brief summary of pulp history.

Introduction. Importance of Wood. Logging opera-



Almost Anywhere on the Saguenay.

tions, etc. Distribution and properties of wood. Other substances for pulp making, partly prepared.

Section 1.—Wood preparation, about 32 pages.

Section 2.—Mechanical pulp, 48 pages.

Section 3.—Sulphite Pulp, 96 pages, by B. Johnsen, Erie, Pa.

Section 4.—Soda Pulp by A. B. Larchar, Old Town, Maine, to consist of 96 pages; partly prepared.

Section 5.—Sulphate Pulp, 48 pages, by Ellis Olsson, West Point, Virginia.

Section 6.—Treatment of Pulp, 48 pages, by J. O. Mason, Grand Mere, P.Q.

Section 7.—Bleaching of Pulp, 32 pages by H. H. Hanson, under way.

Section 8.—Analysis and Testing of Raw Materials and Pulp, 64 pages, by Max Cline, practically finished.

### Volume 3. Manufacturing of Paper.

Preface: Scope of the Volume, and Brief History of Papermaking.

Introduction: Fibres and materials other than wood, and their sources, by Howard Atterbury, New York.

Section 9.—Preparation of Rag and Other Fibres, 96 pages, by E. C. Tucker, Holyoke, Massachusetts.

- Section 10.—Treatment of Waste Papers, about 48 pages.
- Section 11.—Beating and Mixing, 96 pages, by A. B. Green, Erie, Penn., well under way.
- Section 12.—Engine Sizing, 32 pages by J. A. DeCew, New York.
- Section 13.—Coloring, 32 pages by Otto Kress, Madison, Wis.
- Section 14.—Loading, 16 pages.
- Section 15.—Paper Making Machines, 175 pages, by J. W. Brassington, Wilmington, Delaware.

*Volume I. Manufacture of Paper.—Continued*

- Section 16.—Tub-sized Papers, 16 pages, by R. O.

considerable extent, upon the ability of busy men to get time for the preparation of their contributions.

It will be especially helpful to the Committee if the members of our technical organizations and all others connected with the industry, who are in any position to do so, will co-operate by sending in suggestions to



Entering the Harbor of Chicoutimi, Shut in by the Mountains.



**G. C. and R. C. Enjoy Some Scotch—Anecdotes**

Harper, Housatonic, Massachusetts, under way.

- Section 17.—Finishing Operations, 48 pages, H. J. Guild, Bangor, Maine.
- Section 18.—Special Papers on Boards, 48 pages by separate authors.
- Section 19.—Paper Testing, 64 pages, by F. C. Clark, Holyoke, Massachusetts.
- Section 20.—Laboratory Equipment, 16 pages.
- Section 21.—General Mill Equipment, 90 pages.
- Section 22.—Trade Custom and Mill Organization, 48 pages.
- Section 23.—Dictionary of Papers, Tables, etc.

the editor that would tend to make the work more complete and up-to-date. This applies particularly to mills where a process is perhaps used for the first time, or where a particular piece of equipment has been found to be of special benefit, and where some wrinkle in improving the daily routine of millwork has been found especially satisfactory. Such things as washing felts, cleaning wires, lubricating machinery, moving materials, wrapping, loading and storing, and such matters may contain just the points that are needed to round out the treatment of a particular subject, and the editor will be glad to pass on any such information to the author of the section to which it applies. Any such co-operation and suggestions will be very greatly appreciated.



A Part of the Party at Chicoutimi, Ready to Embark in Autos for Kenogami.

Yours very truly,

J. N. STEPHENSON, *Editor.*"

Special effort is being made to produce the work in logical order, and it is hoped that the preliminary sections will be ready for use by the end of the year. It must be borne in mind that a very large work is being attempted, and that unavoidable delays are bound to occur, and that the rate of preparation depends, to a

After the textbooks are available, there will be the question of their distribution and use. This will be matter for close thought on the part of the Joint Committee. The present suggested plan is to have a central educational director, who will receive the pa-

pers and questions submitted. These will be sorted and sent for correction and criticism at the hands of practical men in each phase of the industry; these will mark them and return them to the director. It is expected that he will have a stenographer assistant of good education, who can, herself, mark the preliminary papers. In this way the maintenance of an expensive staff will be obviated, and the papers got expert, first-

prepared, to be addressed to the various provincial authorities, with suggestions for improving primary education; to save children's time and energy, and to secure more uniform systems of primary education throughout the nation.

Fourth: This summer the action of our Council has procured the attendance of students for vacation work in many of the mills which were enterprising enough to make places for them. We have had reports that these students are working well in all branches of mill work. This promises to ensure for the future an influx of our own university graduates as technical men in our mills. Prizes are to be awarded for essays on the summer's work.

Fifth: Night schools last winter made good starts, but were interrupted greatly by the influenza epidemic. In preparation for the future use of our textbooks and their incidental writing and reading, it is suggested that special attention be given next fall to teaching of English, reading, writing, and elementary mathematics.

Respectfully submitted,  
 G. CARRUTHERS,  
 A. P. COSTIGANE,  
 J. N. STEPHENSON,  
 D. DAVERIN,  
 N. GAIN,  
 T. L. CROSSLEY, *Chairman.*



Some of the Delegates "Legging It" to the Greenwood Mill at Kenogami.

hand attention. The interest of the student will be kept up by personal visits, and the inspirational letters which have been found indispensable in other courses.

Second: TECHNICAL EDUCATION IN CANADA:

Bill number 131, "An Act for the promotion of Technical Education in Canada" was passed by the House of Commons the 27th of June, 1919. This action is the outcome of endeavors to secure action on the Report of the Royal Commission on Industrial Training and Technical Education, which has been urged by this Section, and several other organizations. The main provisions of the Act are:

1. Ten million dollars (\$10,000,000) to be devoted in the next ten (10) years to this purpose.
2. Ten thousand dollars (\$10,000) each year to each Province the remainder of the allotment for each year to be based on population, but not to exceed the amount expended by the Provincial Government for that year. (We are informed that, for example, the Province of Ontario under this Act might have available for technical education nearly \$600,000 this year.)
3. Not more than twenty-five per cent of the allotment for any one year to be used for building and equipment, and none to be used for work provided for prior to July, 1919. (It will be seen that the money is largely to be used for salaries and instructional expense, leaving the buildings and equipment chiefly to local initiative. This is, in effect, endowment for maintenance. You will note that it is for new work, also.)

The members of this Section should see to it that some of the benefit of this Act comes to their towns by interesting local school authorities, or initiating movements to demand action.

Third: MOVEMENT FOR EDUCATIONAL REFORM:

This work is progressing, and a memorial has been

REPORT OF THE COMMITTEE ON ABSTRACTS AND PUBLICATIONS.

The committee on Abstracts and Publications has no definite report to make at this time except to state that the activities of the committee are going forward in the usual way.

Plans are made for the publication of the papers read at the annual meeting and other transactions of the sections, but the publishers of the Pulp and Paper Magazine have not yet found it possible to devote the necessary time and machinery to the reprinting of this material. It is hoped that some of this will be available during the fall.

The time which the chairman of your committee has been obliged to devote to the work on the text-book has somewhat interfered with devoting as much time as should be given to the matter of publications.

Respectfully submitted,  
 J. N. STEPHENSON,  
 Chairman.



A Group of Vistors in Front of Price Bros. & Co.'s Office at Kenogami.

COMMITTEE OF TESTING MOISTURE IN PULP.

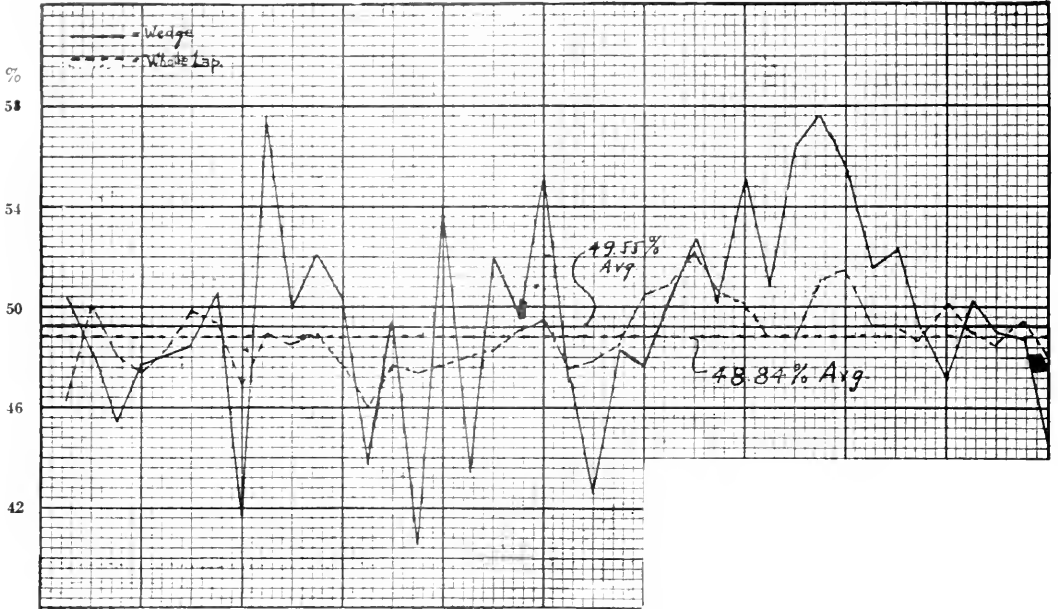
This report was approved by three of the members of the committee so far, and I have to doubt that the other two members of the committee also approved it, although I have not yet heard from them. These other two members are Mr. O. Rolland, of the Rolland Paper Co., and Mr. C. D. Waters, of Price Bros.

I am also enclosing a test taken by one of the members of the Committee, Mr. Mason, of the Laurentide Co., on Hydraulic Pressed Pulp, showing that the

wedge system of Moisture Testing compared with moisture test of the whole lap bears out that the wedge system is very satisfactory. Mr. Mason has taken forty different laps, each lap also tested and wedge sample taken from each lap and the whole lap being weighed and tested also. The result of each one of these tests is shown on the enclosed graphic chart, from which you will see that the results from the wedge samples agree very closely with the results of the whole lap.

MOISTURE TESTS ON PRESSED SULPHITE.

Test No. 4 8 12 16 20 24 28 32 36 40



Figures For Special Test.

Strip No.	Wedge.	Whole Lap.
1	50.24	46.25
2	48.11	50.11
3	45.55	48.02
4	47.64	47.56
5	48.05	48.53
6	48.46	49.81
7	50.57	49.31
8	41.47	46.72
9	57.54	49.16
10	49.88	48.53
11	52.05	48.94
12	50.26	47.60
13	43.66	46.00
14	49.38	47.66
15	40.41	47.35
16	54.35	47.61
17	43.42	48.00
18	51.88	48.24
19	49.33	49.04
20	55.03	49.33
21	47.05	47.36
22	42.70	47.86
23		48.21
24		47.60
25		50.38
26		52.53
27		60.16
28		55.00
29		50.72
30		56.36
31		57.47
32		55.24
33		51.38
34		52.24
35		48.88
36		46.94
37		50.08
38		48.91
39		48.72
40		44.38
Average	49.55	48.84

Summary.

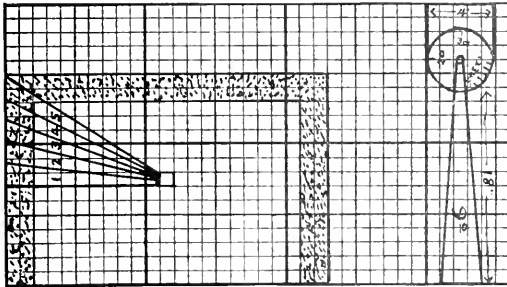
1. Your Committee are of the opinion that the strip sample, as previously advocated, taking clear across the whole length of the wet lap, should be



adopted as the standard method of sampling wet lap pulp.

2. The strip sample taken clear across from sheet of Rogers wet machine pulp should be adopted for the standard method for testing sheets from Rogers wet machines.

3. We are still carrying out investigations as regards hydraulic pressed pulp, in accordance with the wishes of the Council of the Technical Section. Three members of your Committee are working on this, and



as soon as the result of their investigations are known, we will be in a position to give definite statement as regards the question of testing hydraulic pressed pulp. Your Committee have confined themselves, since the January meeting, to investigations on this line.

J. O. MASON,  
Laurentide Paper Co.  
C. BARLOW,  
Donnacona Paper Co.  
E. B. SLACK,  
Chairman of Committee.

### ESTIMATING ROSIN IN ROSIN SIZE MILK.

By ROSS CAMPBELL.

The Department of Chemical Control of the American Writing Paper Company was asked by one of the A. W. P. Mills for a method of determining the concentration of rosin size milk. The use of a hydrometer was found to be unsatisfactory, as the results showed only a variation of 0.8° be., from a 1 per cent to a 5 per cent solution of the size.

A search of the files revealed a method for determining the strength of rosin in the milk, which requires for operation a pint tin container, a folio weight scale and a place in which to evaporate the water from the rosin size milk. The method is as follows:

- (1) Weigh tin container (empty) on scale.
- (2) Fill with exactly one pint of rosin size milk.
- (3) Evaporate to dry mass at a temperature of 212° Fahr.
- (4) Weigh tin plus residue.
- (5) Difference between (1) and (4) equals rosin size in one pint.
- (6) Calculation (5) x 1/2 equals pounds rosin size per gallon.

It is well to note (a) that the container should not weigh more than four ounces (b) that the smallest division on paper scale is equivalent to .0080 oz.; (c) results good to within 2 per cent of actual figures.—“Paper.”

Careful workmen always make good and are seldom injured.

### TRANSPORTATION TOPICS.

#### Judgment Rendered by Railway Commission in “Joint Rates Case.”

The Board of Railway Commissioners for Canada has just issued an order in connection with joint rates between stations on the Canadian Pacific, Grand Trunk and Canadian National Railways, a matter which has been before them for several years. At the present time a shipment moving from a point located exclusively on the C. P. R. to another point located exclusively on the G. T. R. is charged the local rate to and from the point of interchange, plus the cost of cartage at the interchange point. Under the Board's order through rates will be published which will be slightly higher than would apply over one line of railway for similar distances, but considerably lower than the combination of local rates as at present applied.

The order does not provide any special commodity rates but will cover all class rates, and stipulates that tariffs covering shall be issued to become effective not later than October 1st.

#### Advance in Cartage Charges.

Shortly after the settlement of the Teamsters' strike in Toronto, new tariffs have been received from the railways advancing the charges made for cartage at various points.

The new tariffs provide a charge at Toronto for earloads of 4 cents per 100 lbs. and for less than earloads 6 cents. At Montreal the charge will be 5 cents, earloads, and 7 cents less than earloads. At Ottawa and three rivers earloads 4 cents, less than earloads 5 cents. At advance of 5 cents is also being made in the minimum charge for “smalls.”

The new rates take effect September 4th.

#### Application for Increased Telegraph Charges.

A joint application has been filed with the Board of Railway Commissioners by the Great North Western Telegraph Co., Canadian Pacific Telegraph Co., Grand Trunk Pacific Telegraph Co. and Western Union, for permission to increase the present scale of tolls charged by them for telegraph service by not less than 25%.

An application for a general increase was made at the time the last advance in freight rates took place, but owing to certain statutory enactments affecting the G. N. W. in Eastern Territory the Board of Railway Commissioners decided it did not have jurisdiction to authorize a general advance. The Railway Act has now been amended giving the Board power to adjust rates notwithstanding restrictive statutory enactments such as referred to, and the Telegraph Companies are contending that increased wages and operating expenses warrant their exacting higher tolls.

#### Proposed Steamer Sailings From Montreal.

(Subject to change without notice.)

##### To Liverpool.

- Mimodosa C.P.O.S. Line, about Aug. 13.
- Canada, White Star-Dominion Line, about Aug. 13.
- Scandinavian, C.P.O.S. Line, about Aug. 14.
- Metagama, C.P.O.S. Line, about Aug. 17.
- Megantic, White Star-Dominion Line, about Aug. 23.
- Melita, C.P.O.S. Line, about Aug. 29.
- Rimonski, White Star-Dominion Line, about Aug. 31.

##### To London.

- Willaston, Cunard Line, about Aug. 15.
- Vadulia, Cunard Line, about Aug. 17.
- Inkula, Cunard Line, about Aug. 24.

Cornish Point, C.P.O.S.-Furness Line (Furness), about Aug. 25.

Verbania, Cunard Line, about Aug. 26.

Tunisian, C.P.O.S. Line, about Aug. 28.

War Peridot, C.P.O.S.-Furness Line (C.P.O.S.), about Sept. 5.

Mattawa, C.P.O.S.-Furness Line (C.P.O.S.), about Sept. 6.

Dunbridge, C.P.O.S.-Furness Line (C.P.O.S.), about Sept. 3.

#### To Antwerp.

Glenspear, C.P.O.S.-Furness Line (Furness), about Aug. 11.

War Beryl, C.P.O.S.-Furness Line (C.P.O.S.), about Sept. 10.

#### To Glasgow.

Saturnia, Anchor-Don Line, about Aug. 13.

Corsican, C.P.O.S. Line, about Aug. 23.

Cassandra, Anchor-Don, Line, about Aug. 23.

Montealm, C.P.O.S. Line, about Aug. 29.

Cabatia, Cunard Line, about Sept. 2.

Scotian, C.P.O.S. Line, about Sept. 10.

#### To Avonmouth Dock (Bristol).

Dominion, Dominion Line, about Aug. 19.

Vellania, Cunard Line, about Aug. 24.

Mommouth, C.P.O.S. Line, about Aug. 28.

Verentia, Cunard Line, about Aug. 30.

Pretorian, C.P.O.S., about Aug. 30.

#### To Manchester.

Manchester Hero, Manchester Liners, about Aug. 17.

Manchester Division, Manchester Liners, about Aug. 30.

Manchester Importer, Manchester Liners, about Sept. 4.

#### To Hull.

Norfolk Range, Furness Line, about Aug. 15.

Grampian Range, Furness Line, about Aug. 23.

#### To Leith.

Cairndhu, Thomson Line, about Aug. 30.

#### To Dublin.

Carrigan Head, Head Line, about Aug. 16.

#### To Belfast.

Ballygally Head, Head Line, about Aug. 28.

Milmore Head, Head Line, about Aug. 31.

#### To St. Nazaire (France.)

Cape Corso, Can.-French Line, about Aug. 25.

#### To Havre (France.)

Hudson, Canadian-Trans-Atlantique Line, about Aug. 18.

Wisley, Canadian-Trans-Atlantique Line, about Sept. 10.

#### To Buenos Aires and Monte Video.

Clan Skene, Houston Lines, about Aug. 25.

\*Canadian Pioneer, Can. Govt. Merchant Marine, Ltd., about Sept. 10.

A Steamer, Houston Lines, about Sept. 15.

\*Buenos Aires only.

To South Africa—Cape Town, Port Elizabeth, East London, Durban and Delagoa Bay.

Benguela, Elder-Dumpster Line, about Aug. 25.

To Australasian Ports—Melbourne, Sydney, Auckland Wellington, Lytteton and Dunedin (Port Chalmers).

Wangaratta, New Zealand Shipping Co., about Aug. 23.

#### To Barbadoes and Trinidad.

Canadian Warrior, Can. Govt. Merchant Marine, Ltd., about Aug. 26.

Canadian Recruit, Can. Govt. Merchant Marine, Ltd., about Sept. 16.

To Kingston (Jamaica) and Havana (Cuba.)

Canadian Trader, Can. Govt. Merchant Marine, Ltd., about Aug. 27.

Canadian Sailor, Can. Govt. Merchant Marine, Ltd., about Sept. 13.

#### To Charlottetown, St. Johns, Newf'd.

A Steamer, Gulf of St. Lawrence Shpg. & Trading Co., about Aug. 15.

### EXPORTS DECIDEDLY BETTER FOR MAY.

Official returns of Canadian exports of paper, pulp and pulpwood for May, the second month of the fiscal year, show a total value of \$8,418,800, against \$8,407,156 in May last year. Paper gained \$1,410,591 while chemical pulp fell off \$183,464, mechanical pulp, \$76,896 and pulpwood \$828,587. The figures are as follows:

Month of May.	1918.	1919.	Increase or decrease.
Paper . . . . .	\$3,727,829	\$5,138,420	+\$1,410,591
Pulp, chem. . . . .	2,798,720	2,315,276	— 483,464
Pulp, mech. . . . .	433,801	356,905	— 79,896
	\$6,960,370	\$7,810,601	+ \$850,231
Pulpwood . . . . .	1,436,786	608,199	— 828,587
	\$8,407,156	\$8,418,800	+ \$ 11,644

For the two months' period there has been a decrease of \$703,863 as compared with the same period last year. Paper gained \$1,883,777, while chemical pulp lost \$1,409,972, mechanical pulp \$343,126 and woodpulp \$834,542, the details showing:

Two Months.	1918.	1919.	Increase or decrease.
Paper . . . . .	\$6,884,881	\$8,768,658	+\$1,883,777
Pulp, chem. . . . .	1,846,238	3,436,266	— 1,409,972
Pulp, mech. . . . .	917,742	574,616	— 343,126
	\$12,648,861	\$12,779,540	— 130,679
Pulpwood. . . . .	2,071,930	1,237,388	— 834,542
	\$14,720,791	\$14,016,928	— \$ 703,863

The increase in the value of exports of paper taken in connection with the decrease in the value of exports of pulp and pulpwood is indication of the fact that in this industry Canada is increasing its exports of finished products and sending out of the country less raw material to be manufactured abroad, which is decidedly a change for the better. We may soon, however, look for larger exports of pulp.

### LOOKING FOR CHANCE TO START A MILL.

A strong Canadian organization has been investigating the possibilities of the pulp and paper industry as a field for investment. They are considering the advisability of establishing a mill, but would also be interested in an opportunity to render financial assistance to a good firm requiring more capital. The Pulp and Paper Magazine would be glad to help both parties if there are such firms to whom we could be of service.

### NEW PAPER PLANT FOR BROCKVILLE.

Plans for the immediate construction of a big paper manufacturing plant were discussed and endorsed by the Brockville Board of Trade, and an agreement entered into with the promoters, the chief of whom are C. F. Buss, of Mille Roches, and J. R. Buchanan, of Ottawa. It is proposed to give the company a site on which work will be commenced at once. The board is in touch with several other industries looking to Brockville for locations.

# Newsprint Service Bureau Met in Montreal

A very interesting meeting of the Bureau was held at the Ritz-Carlton on Thursday of this week. Mr. G. H. P. Gould, who was elected president at the annual meeting, died on 8th June. Mr. Babcock, the vice-president, lost his wife last week and so was necessarily absent. R. S. Kellogg called the meeting to order and called for nominations for remainder of year. P. T. Dodge was nominated by Mr. Meade, but due to a proposed trip to Europe and other reasons declined to accept. Mr. Meade defended his nomination so well that Mr. Dodge reconsidered and took the chair amid the applause of the meeting. In accepting his duties Mr. Dodge urged honest, open methods of doing business and of establishing conditions that will best forward the interests of the whole industry.

Mr. Kellogg made an announcement regarding the boat trip up the Saguenay. Mr. Bagg, Mr. Sterling, Mr. and Mrs. Kellogg, Mr. Thorne, Col. Ray, and Mr. Steele and party, took advantage of the opportunity to visit the mills at Kenogami. Mr. Tombs took charge of the arrangements for this trip.

Mr. Kellogg explained some very interesting tables and charts. At present rate of production, all mills in Canada and the U. S. this year, will make 2,120,000 tons of newsprint compared with 2,002,000 in 1918. Newspaper consumption has increased at least 20% between January and June. Advertising has increased 46 per cent, while total gross circulation has decreased 5 per cent. Mr. Dodge stated that some manufacturers are advertising to avoid paying the money in taxes and getting more benefit from it, also there are many firms in the field who never advertised before and much of this will be continued. Mr. Kellogg is making a record of number of pages printed by leading papers of the country. Chicago papers have averaged 24 pages daily and 92 Sunday, against 20 and 90 in New York papers. Many large publishers are said to be expecting a stable permanent newspaper price of 3 cents per copy. Manufacturers of newspaper presses and other presses are filled up with orders that will keep them busy for 18 to 24 months.

The U. S. Forest Service report on pulpwood and wood pulp production for 1918 was distributed. This was printed at the expense of the Newsprint Service Bureau.

The secretary referred to the work of standardizing cost accounting in the mills. The paper industry is very fortunate in its ability to know just what costs are. The Federal Trade Commission have approved the methods and principles of the Manufacturers.

Twenty-four firms are now sending in paper samples and twenty-three are giving wage schedules.

One of the attractions of the meeting was the exhibit of more than 160 specimens showing the war

uses of paper. This was supplemented by some excellent pictures of Canadian mills and water powers.

## Cost Keeping.

Mr. Percy Wilson, of the Spanish River Mills reported for the Cost Accounting Committee and described the work of the committee and asked co-operation and assistance of each mill in the work introduced by the field agent of the committee, Mr. Ware. He stated that each mill must give up a little to get in line.

Mr. Wise interpreted the agreement under which the newsprint price in the States was to be established. He explained how the costs of paper were established by the Commission and the former false findings that had to be disproved and traced the application of the War Labor Board's wage award and the Railway Board's freight increase. An interesting reference was made to the coming hearing before the U. S. Circuit Court on October 6th.

The other points discussed were cores and color. Speaking on the former, Mr. Stadler of the Belgo-Canadian Co., expressed the opinion that the iron tipped paper core is the coming thing and the best and fairest method is to charge the core as paper to the customer. Then when the stripped core is back at the mill, the customer is credited with that weight.

Mr. Steele supported this scheme and mentioned that it was the same practice as obtained in the matter of cement sacks and other containers. No complaints are made by customers. Mr. Meade remarked that the tendency is toward the making of a core that can be left with the publisher.

Mr. Dodge explained how cores are damaged in the press-room. In one case the friction brake was applied all at one end of the core and twisted off the iron ferule. He stated that improvements in press manufacture will greatly remedy conditions causing core troubles.

In regard to color of newsprint it was brought out that a large number of mills are making it in the natural, while many are using a little color. Considerable discussion arose over the question of whether a standard color should be adopted. Several spoke in favor of it, but no motion was made. When someone suggested that the matter depended largely on getting a standard blue, Mr. Stadler replied that any shade can be matched. Apropos of another suggestion he added that this is not a matter for investigation by the technical organizations, but an individual problem for each mill to work out its own color formula. Mr. Houck explained how the Meade Co. invited their customers to a meeting, where an expert on color explained the whole matter, including the effect of the ink. This contains what he called a blue toner which tends to compensate pink or yellow. After a careful consideration of the matter, a shade part way between the once popular

for tint and the natural color was chosen. It is called a modified natural. It was stated by another that stored pulp requires a little more coloring, and the problem is also affected by water conditions.

At the afternoon session the Bureau passed resolutions on the loss of President G. H. P. Gould, who died in June. Mr. Gould has been a prominent figure in newsprint circles for many years.

The luncheon was a very enjoyable affair, gustatorially and otherwise. A fine menu was served, and forty-three plates were laid. When appetites were appeased, and the guests had enjoyed a friendly chat with neighbors, Mr. Bothwell, president of the Canadian Pulp and Paper Association welcomed the guests, especially the ladies, and called on Mr. Dodge who had just been elected president of the Newsprint Service Bureau. Mr. Dodge spoke appreciatively of the cordial co-operation between Canadians and Americans. "We must do justice to our customers and so conduct our business as to get a fair return on our capital investment. In small things we are competitors, in large ones partners," said Mr. Dodge.

#### The Newsprint Industry and Certain Economic Problems.

Mr. B. K. Sandwell was then introduced as the editor of one of the few Canadian newspapers that had shown a tendency to be fair to the paper makers, and who is guilty of many other accomplishments. Mr. Sandwell began his address in a delightfully humorous vein which caused gusts of laughter (see "gustatorially" previously used). He referred to the industry as the best regulated, or at least the most regulated business on the continent and the gathering as appearing equally well regulated. He cited the incident of a minister who used to pray that rain might fall on the crops during the week that had passed, believing that with God all things are possible. The Canadian Government seems to have arrogated unto itself similar powers in regulating or changing the price that manufacturers had received in the past for their product.

Still keeping his hearers in a happy state of mind, Mr. Sandwell continued more seriously on the subject of "The Newsprint Industry and Its Relation to Certain Economic Problems." Only a brief summary can be given at this time.

Newsprint is the corner stone of Democracy, for without cheap and abundant paper it would be impossible to carry on a successful democratic government. To do this it is necessary to distribute much information to many people, they must be educated. The manufacturer, with the aid of unsurpassed natural resources and inventive genius and business skill and courage has done his part well. The newspaper men have also done their part, perhaps as well, perhaps not.

Government regulation may extend to the reading matter of newspapers, but though it is possible to prevent material from being printed it is not possible to compel people to read. Therefore newspapers contain

what the people want to read, so that they may involuntarily absorb some information they ought to read.

Aside from its monetary value to the publisher, the advertisement is an important means of education. In this way, people are educated to the consumption of new products whose manufacture employs much labor, and whose use often brings many advantages.

The speaker then explained what the newsprint industry means to Canada: It is the economic mainstay of the country. Its product is sold for cash, and most of it in the United States, from which we do and always will, buy a lot of material, and where we must pay cash. Foodstuffs go largely to Europe for credit, because that is all they have. The United States is doing the same thing, so that the wealth of the world is flowing into Uncle Sam's pockets. Exchange is said to be favorable to the States because of this enormous excess of exports over imports. There is some question whether this is a healthy condition. Too great an excess may be decidedly otherwise, and nature will cure the malady in time because other nations can not afford to trade with such a handicap, to the disadvantage of all. It would be well to consider taking steps to relieve the condition before congestion of wealth brings on economic apoplexy or something of the sort.

Mr. Wise and Mr. George Montgomery were also called on by Mr. Bothwell and Mr. Montgomery responded for the legal profession, expressing his pleasure at seeing the newsprint men looking so well in spite of their troubles.

The following mills were represented at the meeting and luncheon:—Abitibi Power & Paper Co., S. R. Wilson and R. A. McInnis; Belgo-Canadian Pulp & Paper Co., John Stadler and V. Delvaux; Brompton Pulp & Paper Co., J. A. Bothwell and Ernest Rossiter; Canada Paper Co., F. J. Campbell; Canadian Export Paper Co., W. J. Linahan, N. E. Wainwright, J. C. Ardron, G. F. Steele, and John Mather; Dommacona Paper Co., Geo. M. McKee; Finch, Prunyn & Co., C. A. Woodcock and Maurice Hoopes; International Paper Co., Philip T. Dodge and W. E. Haskell; Laurentide Co., Geo. Chahoon, jr., and F. A. Sabbaton; G. H. Mead Co., R. T. Houck, jr.; Newsprint Service Bureau, R. S. Kellogg, G. A. Ware and H. H. Werley; Oswego Falls Pulp and Paper Co., C. W. Tooke; Remington Paper & Power Co., R. B. Maltby and M. S. Moyer; Spanish River Pulp and Paper Mills, Ltd., Percy B. Wilson and Geo. H. Mead; St. Regis Paper Co., F. L. Carlisle and J. J. Warren; Taggart's Paper Co., J. V. Baron; West End Paper; E. B. Sterling and M. M. Bagg; Price Bros & Co., J. Leonard Apedaile, Guests; Mrs. R. S. Kellogg and Mrs. C. W. Tooke, and Edward Beck, Geo. H. Montgomery, B. K. Sandwell, Henry A. Wise, J. N. Stephenson, R. C. Sturgeon, and Wm. Romain Tyree.

Let's all keep industry humming by working together, employers and employees, in harmonious co-operation.

## British Trade News

(From Our London Correspondent.)

### Paper Mills Faced With More Trouble.

London, July 29.—Within the last 48 hours there has developed a crisis in English and Welsh industrial circles which has surpassed all previous discontent in any industry in the United Kingdom, and how the paper mill owners are going to fare within the next few weeks it is difficult at present to conceive. Today there is discontent everywhere. There is a body known as the "The Triple Alliance" and it includes transport workers, railway men, paper mill workers and engineers, and side by side with this body is the Miners' Federation of Great Britain. A big section of the miners have struck work and as I write 6 pits are flooded and 17 are in danger. With this state of things going on the outlook for paper mills is not very rosy. I got into touch with the Miners' Federation and I was informed that nothing could be done until the Premier was interviewed and a series of conferences had been arranged. A week ago it was announced that coal would go up to the extent of 6s a ton. This meant a great deal for paper mills, as the cost of production would be increased and the prices of papers would need another jump. But the greatest trouble of all was a supply of coal regularly and here the managers of mills were taxed to their wits ends.

Some of the mills have small stocks of coal on hand and if coal supplies run out before the miners settle their disputes it will mean the paper mill workers will have to cease operations. At present transport on the railroads is dislocated for running up coal supplies and if mills have not profited by the experience obtained in the miners' strike some years ago, I am afraid the position of the paper industry will become jeopardized before we know where we are. Events are moving very quickly now and they are telling against industry—no business man can deny the fact. In my last despatch to the "Pulp and Paper Magazine," I had to record the demands of the workers for shorter hours and higher wages. That dispute was settled at a late hour one night and the provisional agreement arrived at reduced the working week to 48 hours for day workers and 44 hours for shift workers. This demand of employees means more machinery, upset trade, and created a feeling of uncertainty. Now the coal supply has to be faced and one mill owner I was speaking to yesterday said he was exasperated and felt helpless, because he no sooner got over one trouble than he was up to his neck in another, and this way of getting on was neither good for the country nor industry as a whole. The policy of wait and see has now to be adopted.

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### "The Times" Introduces Mr. Dawe to England.

Mr. A. L. Dawe, the Secretary of the Canadian Pulp and Paper Association, has had a good introduction to the buyers of Canada's products through the medium of the press. The "Times" announced his arrival in the country and a good many of the provincial newspapers have had short articles on Canada's production of pulp and paper and the great resources that lie behind the mills. There is no doubt Mr. Dawe's visit will do some good directly and indirectly, and if he has done nothing else he has told the British mill owner that the Canadian pulps—and he has specified them, too,—are on a par with those of Scandinavia. The "Times," one of England's leading dailies, has stated that Mr. Dawe has come to London to give

advice and help buyers in the matter of Canadian pulps and it is many years since I have read such a valuable introduction in England's greatest dispenser of news. The British paper mill owner need not be prejudiced against Mr. Dawe's visit, because there must be reciprocity in trade and industry, and the more scientific knowledge or experience one can introduce on a flying visit to the Mother Country the more it will be appreciated. If it was good for the Norwegian, or Swede, or German to visit London and expound the value of his country's products prior to 1914, surely Canada takes a preference above foreigners and the claims of her industry should not be turned down.

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### Canadian Paper Suits British Printers.

The Master Printers' Association has a social gathering the other day and some information was required on paper prices. It was pointed out that some printers were held up by the British mills, strawboards in some cases costing as much as £25. The reply given was that many of the mills had made exorbitant profits during the war and printers were advised to watch the prices of papers in the United States where they were cheaper than in England. All the prices at home would show a tendency to harden because the mills were full of orders and they were not likely to go on reducing their prices. The staple prices of paper had now being reached, but it was the duty of the printer to watch paper, his raw material, and they should not be dependent on foreign manufacturers. There was no great cause for alarm as regards prices and supplies in England. Here we have an instance of lack of knowledge of the products of the Canadian mills. But go to the printer who uses the Dominion paper and he will tell you that its suits his machinery better than the States paper. Some printers complain that there is too much China clay in the American papers and from what I have seen of their rollers they are not far wrong.

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### The Pulp and Chemical Markets.

The action of the miners and the recent unsettlement in the paper industry, has left dealings in pulps very uncertain. At present prices are unchanged, sulphite being £37 for good quality, news grade £23 15s to £24 and easy bleaching £24 15s to £25. There is only a small demand for small parcels, as manufacturers are in a state of uncertainty. In Norwegian mills things are not of the best and there is a feeling here that shipments will be dislocated before very long. Small supplies are arriving from Canada and U. S. A. For instance, according to the customs returns 3,700 tons of moist mechanical arrived during the first week in July, valued at £25,823, compared with 4,099 tons from Sweden at £38,330 and 5,700 tons at £47,920 from Norway. In addition Canada sent during the same period 1,500 tons of unbleached chemical (dry) against Scandinavia's 7,000 tons. The U. S. A.'s supply reached only 36 tons. Sweden is keeping up a regular supply with the British mills at steady prices. The feeling generally is that prices all round for pulps and papers will not be easier for some considerable time and Canadians would do well to keep a keen eye on the progress of the markets here.

The chemical market at present is at a standstill, as regards business. Prior to the coal dispute there was a good demand for caustic soda, alkali, and bleaching powder and prices showed no upward tendency.

In respect to the market keeps firm. Rags of all kinds continue in good demand and waste papers are unchanged, stocks being very large and little business passing. China clay is much sought after and pit owners report that a fair volume of trade is being done on home and export account.

The Paper Box Trade Board (Great Britain) is about to issue a proposal to vary the minimum time rates as follows: For female workers (other than learners) from 5<sup>3</sup>/<sub>4</sub>d to 8d per hour; for male workers (other than learners) from 9d to 1s 3<sup>1</sup>/<sub>4</sub>d per hour, with corresponding increases in the minimum rates for female and male learners respectively. The Board also propose to fix piecework basis time rates of 8<sup>1</sup>/<sub>2</sub> and 1s 3<sup>1</sup>/<sub>4</sub>d an hour for female and male workers respectively.

A Paper Bag Trade Board has now been constituted. Professor L. T. Hobhouse is the chairman, Mr. J. H. Stoker, K.C., deputy, and Mr. F. Poppellwell, secretary. There are sixteen members representing the employers and sixteen representing the workers. The Board will deal with disputes and wages questions.

#### INTERNATIONAL FIRE FIGHTING.

Because of the serious fire conditions and danger of a bad conflagration due to spreading of fires on both sides of the border last week, Forester Cox, of Minnesota, immediately conferred with R. H. Campbell, Ottawa, chief forester of Canada, who was in St. Paul, and arranged for closer co-operation between Minnesota and Canadian rangers. Patrols will be increased at once, he stated, and any additional measures necessary to check the menace will be taken.

#### SCENE SEEN BY T. S. PARTY ON THE SAGUENAY.



Capes Trinity and Eternity as They Appear on the Return Journey.

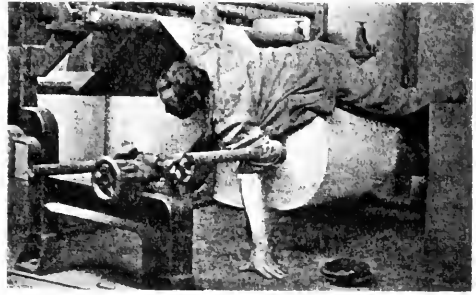
A cloudburst in New Brunswick last week did serious damage at Bathurst.

The barque Bessfield, which was loading at the East Bathurst dock of the Bathurst Lumber Company, broke away from her moorings and went aground near the George Eddy Company mill.

Edward Beek, who is acting secretary of the Canada Pulp and Paper Association, in a letter recently published in the Montreal Gazette calls attention to the wholly different attitude of the Government in fixing prices of wheat and newsprint. In the first case the producer is considered, and in the second, the consumer. He concludes: Do you know of any person, outside of politics, to explain why the Government treats the wheat-growers and the paper mill owners on such radically opposing lines?

#### A DOUBLE SAFETY LESSON.

The "Raripaeo," published by the Racquette River Paper Co., printed this picture in a recent issue. It well illustrates the danger of wearing loose clothing—carelessness on the part of the employee, and the



danger of projecting setserews—carelessness on the part of the mill. Another second and there would be a broken arm or shoulder blade and a sprained back.

#### SMOKE FROM FOREST FIRES STOPS SHIPS.

Soo, Ont., Aug. 12.—Up till last night since 11 o'clock Sunday night, not a vessel had passed through the canals bound up, while of the down bound traffic only two, the Agawa and Rochester, have looked through since Sunday.

Over the river and Lake Superior hangs the smoke from forest fires, like a low cloud, completely obscuring vision in every direction. Navigation has practically ceased.

At short intervals the hoarse sirens of the scows of anchored craft send out their notes of warning. It is the worst situation that has confronted navigation for years.

#### BAHR BROTHERS BEGAN AS BOYS.

At the ages of 13 and 14 the Bahr brothers began work in the ground wood mill of the Michigan Woodpulp Co. at Niles, Mich., and soon worked into positions of millwrights. The late Hon. W. S. Millard, to whom they applied for a job as screen tender boys, told them they were too young, but they persisted in asking for work and were given something to do to get rid of them. In the course of their long period of service they strove to make such improvements as would assist their employers.

The most notable result was the development of their Positive Jordan Filling, which was patented in United States in 1910 and in Canada in 1912. The filling is not only of great assistance in decreasing the time and trouble required to keep Jordans in good working condition, but the metal is of such a character that it resists chemicals and mechanical wear and has further found extensive use in the mills of the United States and Canada, and even in foreign countries. It is used on all kinds of stock from tissue paper to box board. The success of the Bahr Bros. in building up their extensive business is but another instance of the reflex advantage of giving an employer good service.

A place for everything and everything in its place helps to reduce accidents.



## Technical Section



### New Members.

Percy Austin, of Bathurst Lumber Co.'s sulphate department, Bathurst, N.B., and Samuel S. Berger, Spanish River Pulp and Paper Mills, Espanola, Ont., have been elected members of the Technical Section and Francis Ernest Shackell, Laurentide Co., Grand-Mere, P.Q., is the newest student member.

### SUGGESTIONS WANTED BY TEXTBOOK COMMITTEE.

The Joint Executive Committee on Vocational Education present this week to members of the Technical Section, and other readers of Pulp and Paper Magazine, another synopsis of one of the sections of the textbook, for criticism, comment, and suggestion.

Synopsis of chapters on preparation of linen and cotton rags.

### SYNOPSIS OF CHAPTERS ON THE PREPARATION OF LINEN AND COTTON RAGS.

1. **Introductory:**
  - a. A brief history of the use of rags in paper making leading up to
  - b. The present day importance of rag fibres to the industry.
2. **Sources of Supply:**
  - a. How rags are handled. (Balers.)
  - b. New rags or table cuttings.
  - c. Old rags. From mixed rags to the graded rags which the paper mill buys.
  - d. The storing of rags at the mill. Loss of weight.
3. **Classification of Rags:**
  - a. General specifications.
  - b. Specific specifications.
  - c. Rags sold on sample.
4. **Preliminary Thrashing:**
  - a. Opening up bales.
  - b. Description of thrasher.
  - c. Thrasher dust, loss in weight.
5. **Sorting and Inspecting:**
  - a. Stripping.
  - b. Grading.
  - c. Inspecting.
6. **Cutting and Dusting:**
  - a. Purpose.
  - b. Description of Cutter.
  - c. Railroad and fan dusters.
  - d. The description and use of the magnetic roll.
7. **Cooking:**
  - a. Packing the boiler.
  - b. Preparation of cooking liquor.
  - c. The cooking and reasons for it.
  - d. Types of boilers, Kinné valves.
  - e. Variations in cooking practice.
  - f. Discussion of general theory of cooking and paper mill practice.
  - g. "Pulling" the boiler.
8. **Washing:**
  - a. Removing the dirt.
  - b. Drawing out the fibres.
  - c. The washing engine.
  - d. Discussion of washing.
9. **Bleaching:**
  - a. Theory of bleaching.

- b. The use of bleaching powder.
  - e. The use of liquid chlorine.
  - d. Discussion of amount of bleach needed, etc.
10. **Drainers.**
    - a. Purpose.
    - b. Construction.
    - c. Time in drainers. 1. Washing in drainers.
    - d. Possible use of wet machine. 1. Advantages.
  11. A discussion of the process losses and the extent to which they occur in each of the above steps.

### Preparation of Esparto.

1. **Esparto:**
  - a. Its nature.
  - b. Discussion of its use in and importance to the paper industry.
  - c. Sources of supply.
2. **Preliminary Treatment:**
  - a. Sorting and dusting.
3. **Cooking:**
  - a. Types of boilers used.
  - b. Cooking liquors.
  - c. Discussion of mill practice.
  - d. Brief sketch only of recovery. (See soda process.)
4. **Washing and Bleaching:**
  - a. Washing tanks.
  - b. Bleachers.
5. **Yields and Discussion of Losses.** (Briefly touched on where same equipment and processes used for pulp.)

### Other Fibres.

1. **Straw:**
  - a. Its use and importance.
  - b. Sources of supply.
  - c. Preliminary treatment.
  - d. Cooking.
  - e. Washing and bleaching.
  - f. Yields.
2. **Jute:**
  - a. Use and importance.
  - b. Supply.
  - c. Preliminary treatment.
  - d. Cooking.
  - e. Washing and bleaching.
  - f. Yields.
3. **Hemp:**
  - a. Use and importance.
  - b. Supply.
  - c. Preliminary treatment.
  - d. Cooking.
  - e. Washing and bleaching.
4. **Brief work on Linters, Begasse, Ramie, etc.**

The work in the beater by no means primarily decides how the paper turns out. In rag-papers the work in the sorting room is of primary importance, and in cellulose and mechanical wood-pulp papers the kind and the growth of the timber employed comes first, then the kind of cooking or grinding, and only thirdly the work in the beater.

Carelessness never cures anything.

## A New Era for American Dyes

The present readjustment period marks a new era in the American dyestuffs industry. The importance of the manufacture of color, however, must be measured, not by the mere value of the output, but by its tremendous influence upon other manufactures dependent upon it.

The position of the American manufacturers of aniline colors to-day, is so infinitely stronger than it was before the war that the dullness, hesitation and uncertainty of the consuming markets may well be overlooked in consideration of events which have placed the United States in a most enviable and independent position—one which less than four years ago was thought to be beyond all possibility.

Prior to the war, the values of dyes annually consumed in the United States, was estimated at not more than \$25,000,000, but the colors were essential to the production of other manufactured merchandise to the value of \$2,500,000,000. The indirect control held by Germany over our textile and other dye consuming industries, may therefore be gauged by the fact that practically all the coal tar colors used here were made by German agents (some of whom were American concerns) from intermediates supplied by the Rhine factories. Our dependence on Germany for dyes, however, was accepted without relish, and had it been possible to secure adequate protection, we would have been making our own colors long ago. We had all we wanted and to spare, of raw material, and what we lacked in experience could soon be made good.

But the establishments of plants on a scale capable of producing enormous quantities of intermediates would involve such a heavy investment, that no one was willing to take the risk, especially as consuming industries would be sure to offer continued opposition to a duty high enough to sustain American manufacture against powerful and unscrupulous competition.

But war came, and with it the elimination of Germany from the market. Americans were thrown upon their own resources, and then, and not till then, did we realize how great those resources were. Still another advantage of the Germans was denied manufacturers on this side, except to a negligible extent. Explosives are produced from the same coal tar base as colors and the production of one results in an accumulation of the other. After the German factories had produced vast quantities of residue in the process of color making, for which no appropriate use could be found, it was discovered, about fifteen years ago, that these by-products could be as easily converted into transformed into picric acid. When these discoveries were made, Germany began to push the sale of her dyes and to store her explosives, and in the minds of her governing powers, the residual material may have been of greater consequence than the main product. At all events, the cost of the latter was considerably reduced.

With the prospect of war constantly in view, therefore, it was but natural that the supply of dyestuffs should increase, and that every effort should be made

to find a ready market for them. This, of itself is sufficient to account for the persistent activity of German dyes in this country during the last ten or fifteen years. American manufacture must be stifled, not only in order to hold the color market for Germany, but to check the production here of explosives. No effort was too great or too small to achieve this end. When other measures failed, resort was had to bribery, and it is now well known that many dyes employed by American manufactures were in the pay of German agents.

The chain of distribution was complete. It bound the consumer fast to the factories on the Rhine or to their subsidiaries on this side until the British Navy severed the bonds. From this time on, but two comparatively small lots of dyes have reached here via the submarine *Deutschland*. Now German export trade in colors is dead.

It was of course no secret that chemical dyestuffs had been accumulating in Germany with the manufacture of explosives, which awaited only the resumption of business relations with this country for dumping on the market here, and the fact caused some little uneasiness. Conflicting reports cause one to be doubtful as to how great a quantity is really available.

The great plants on the Rhine are within the Allied zone of occupation, and recent trade reports from there are anything but encouraging. The once prosperous and efficient factories are said to be in no condition in fact, to flood any market. One of the largest producing concerns acknowledges that its workmen turn out but half of their former production, that wages have advanced, and that during the war the outturn of so called "peace products" represented only five per cent. of capacity, owing to the heavy drain upon the plants for explosive materials. All further production of munitions stopped when the armistice was signed, and yet the factories are operating at not more than ten per cent. of normal production.

Their government business at an end, their domestic market demoralized, and their over-seas trade ruined the prospects of the German dye manufacturers are anything but bright. Even admitting the marvellous recuperative power of the German people, it is difficult to see how their dye industry can ever again become a factor in the American market. To make assurance doubly sure, the United States Government has confiscated their American patents and sold them to a syndicate of prominent business men known as the "Chemical Foundation, Inc.," which will act as custodians and lease the patent rights to any responsible manufacturer.

This company, which is capitalized at \$500,000, has purchased some 4,500 patents from the Custodian of Alien Property, for \$250,000. Of these however, only a comparative few are of any real value; but as all German dyes are manufactured under the rights of one or more patents, it will be possible to exclude all importations on the ground of infringement.

The way therefore looks clear for the building of a new giant industry in America.—J. M. F.

One moment's carelessness may undo a lifetime of painstaking effort.



# PULP AND PAPER NEWS

George Warburton, who for three and a half years was overseas and returned some time ago from France, has taken a position as city traveller for Cameron and Fraser, 104 Front street east, who recently embarked in the wholesale paper business and handle toilets, tissues and wrappings. Mr. Warburton is a former employee of Kilgour Bros., Toronto.

A. P. Costigane, of Toronto, safety engineer of the Ontario Pulp and Paper Makers' Association, is once more back at his desk after spending a pleasant holiday at Big Bay point, Lake Simcoe.

John Larkin, of the Federal Paper Co., Montreal, was in Toronto during the past week calling upon the members of the trade.

C. Nelson Gaim, sales manager of the Don Valley Paper Co., Toronto, has returned to business after spending a pleasant vacation at Peninsular hotel, Lake Simcoe, with his wife and family.

J. B. Piper, of the selling staff of the Provincial Paper Mills Co., and S. F. Duncan, secretary-treasurer of the company, are back at their desks after enjoying a pleasant vacation.

Dr. James C. Miller has been appointed to the new post of assistant director of Industrial and Technical Education for the province of Ontario and will commence his duties next month. Dr. Miller is a native of Wellington county and received his professional education in Saskatchewan, and is at present acting as supervisor of the work of the United States Federal Board for Vocational Training. His doctor's degree was conferred upon him by Columbia University and he has taken a number of courses at Teachers' College there.

It is announced that wireless telephones and motor boat patrols will shortly play a part in the matter of protection from forest fires. The motor boat patrol will be introduced for the Georgian Bay and Muskoka districts where the Department of Lands, Forests and Mines of Ontario has the whole subject now under investigation.

All logging and pulpwood companies will increase the number of their camps this fall in order to get out more timber. There are, at least, ten thousand laborers wanted in Ontario for the camps, according to Dr. Riddell, superintendent of the Labor branch of the Public Works Department for Ontario. Wages run from \$55 to \$65 a month at the present time and the cost of rationing the men, based on the present scale of prices for supplies of all kinds, will be slightly higher than last season.

W. L. Smith, former agricultural editor of the Toronto Globe, has been appointed agricultural editor of the Farmers Sun, Toronto, succeeding Gordon Waldron. A meeting of the shareholders of the paper, which is owned by the United Farmers of Ontario, will be held next month to decide whether or not the Sun shall be converted into a daily publication or continued as a weekly.

William Turnbull, of Victoria, B.C., who is now one

of the lumber commissioners for British Columbia, paid his first official visit to Toronto and Ottawa during the past week. He has charge of the publicity work of the Forestry branch of the Department of Lands and for many years was engaged in newspaper work in the west, being publisher at one time of the Prince Rupert News. He reports great activity in the pulp industries on the coast.

A big sale of the unlicensed crown lands timber limits will be held by New Brunswick about the middle of next month. The sale will be conducted on a stumpage basis. Engineers for the department have recently completed several surveys. The last auction took place in October last.

Extensive improvements have been made to the offices and sample room of Warwick Bros. and Rutter, manufacturing stationers, Toronto, who have now exceptionally attractive quarters.

The MacGregor Paper Co., Limited, Montreal, has recently been granted a federal charter with a capital stock of \$100,000, to carry on the business of merchants, manufacturers and dealers in paper, pulp straw board, paper boxes, paper bags, etc. Among the incorporators of the company are W. R. L. Shanks and F. T. Bush.

Here is a strange parallel. The late Sir Wilfrid Laurier, at the beginning of his career, followed newspaper work for quite a while, having edited and contributed to several Liberal papers. His successor as leader of the Liberal party, Hon. W. L. Mackenzie King, after graduating from Toronto University in 1895, also entered journalism and in 1895 was a member of the repertorial staff of the Toronto Globe for a considerable period.

W. W. Weed, has been appointed manager of the Kenwood Mills, Limited, Arnprior, Ont., manufacturers of woollen felts and jackets of all kinds for paper and pulp mills. He succeeds J. T. Griffith, who has been general manager since he and N. L. McNaughton sold their interests to F. C. Huyek & Sons, of Albany, N.Y., about a year ago. Mr. Griffith has been in very poor health of late and was forced to step aside. Mr. Weed, the new manager, has had wide experience and a thorough insight in the business and has become an enthusiastic resident of Arnprior.

Supplementary letters patent have been granted authorizing the Montreal Lithographing Co., Limited, Montreal, to increase their capital stock from \$100,000 to \$200,000, the increase to consist of 2,000 shares of \$50 each.

John M. Imrie, manager of the Canadian Press Association, who with his wife and family, has been spending a month's holidays at the Elgin House, Muskoka, has returned to Toronto.

W. G. Clarke, of Clarke Bros., Limited, Bear River, N.S., and A. G. McIntyre, president and managing director of the pulp and paper division of the company, spent a few days in Toronto recently on his way west to Port Arthur, where they inspected the plant

of the Port Arthur Pulp and Paper Co. Mr. Clarke and Mr. McIntyre have been visiting pulp plants in the New England States with a desire to secure all the latest ideas and suggestions in construction and equipment. Clarke Bros., Limited, are erecting a sulphate pulp plant at Bear River, which will have a capacity of 30 tons per day and they are also enlarging their saw-mill and woodworking operations. Good progress has been made on the construction of the new pulp buildings. Mr. McIntyre was until recently newsprint expert of the American Newspaper Publishers Association.

The Canadian Pacific Railway this week established a new direct line between Vancouver and Singapore. It will save trans-shipment at Hong Kong. Calls are made at Japan, China, the Philippines and Malay States.

Canadian Steamship Lines inaugurated a passenger service between Montreal and Havre, France.

Sir Byron E. Walker, President Canadian Bank of Commerce, arrived back from studying trade opportunities in the Orient.

Wayagama Pulp and Paper Co. has established its own office in London, England, with a view of placing kraft paper on the British market.

Belgo-Canadian Pulp and Paper Company, 51 St. James street, contemplates the erection of a warehouse on St. Patrick street, according to reports.

Work on the foundations of the new shipping building at Laurentide has practically been completed and the erection of the steel work for the floors is about two-thirds done. The construction department estimate that if the remaining material arrives in time that the building can be closed in very soon after September 1st.

#### **DONNAONA BONDS FOR WORKING CAPITAL AND REFUNDING.**

As has been understood in financial circles for some days Royal Securities Corporation has completed negotiations for the purchase of \$1,750,000 6 per cent 21-year first mortgage sinking fund bonds of the Donnaona Paper Company, Limited.

##### **Output Goes to U. S.**

In view of the necessity of increased Canadian exports to the United States as a corrective for the discount on Canadian funds in New York, it is a significant fact that practically the whole of the Donnaona output of pulp and newsprint is exported direct to the United States, a large part of the requirements of the Hearst papers in New York City being supplied from the Donnaona Mills.

The company ranks amongst the large Canadian producers of pulp and paper, its annual output of newsprint paper totalling 30,000 tons in addition to which it produces 18,000 tons news sulphite pulp and 37,500 tons groundwood pulp.

The new financing is for the purpose of funding large expenditures made by the Donnaona Company in plant extensions during the last few years, and also to supply working capital necessary for the development of the company's rapidly increasing business.

Large extensions were made last year and no new work is contemplated.

It is expected that following a private offering of the bonds a public issue will be made in due course by Royal Securities Corporation.

#### **NOT AFRAID OF THE HUNS.**

A dispatch from London says a number of English manufacturers have been visiting industrial centres in Germany. Among them was Joseph Dixon, a prominent paper maker.

Joseph Dixon, one of the largest manufacturers in the kingdom, does not hesitate to say that he and his colleagues learned very little in Germany. They say one or two tricks are resorted to at the German mills, including one from which it was possible to make common paper appear very much like high quality product, but Mr. Dixon thinks it is very unlikely that the British manufacturers will resort to these methods, and he holds the view that with better relations between workmen and manufacturers, England can well maintain its position in the paper making industry.

#### **NEWSPRINT INDUSTRY BENEFITS.**

The premium on New York funds at this centre continues to rule close to the 5 per cent level, yesterday's closing quotation being 4 13-16 between banks. The situation as it affects this exchange, while a substantial disadvantage to Canadian importers—and therefore to the public generally—is not without its compensating features. The pulp and paper industry of the Dominion, without whose exports the premium on New York funds would undoubtedly be at a much higher rate than recently prevailing ones, is enjoying an extra profit of approximately \$3.75 on every ton of newsprint shipped to the United States.

To a company like Spanish River, for example, whose daily output of newsprint is around 500 tons, the greater part of which is exported, the extra profit on a year's operations occasioned by the adverse rate against the Canadian dollar is a highly substantial one.—The Gazette.

#### **INVENTORY OF TIMBER IN QUEBEC.**

Quebec, August 6.—An inventory is being made by the officers of the provincial Department of Lands and Forests.

An expedition is leaving to-day for Maskinonge, to take stock of the riches of that region in timber limits. The Tourville Lumber Company is co-operating.

There is another expedition in the Abitibi region wherein, for some weeks past, work has been done to collect data and figures on the wealth of that region in lumber. Two other expeditions are also at work on the north shore of the Gulf of St. Lawrence. One of these will probably drive inland as far as the confines of the new Ungava region.

Every forest region of the province will thus be visited for the inventory of Quebec's riches in timber lands.

The construction of a big paper mill has been started at Maehyon Dong, near New Wiju, Chosen (Korea), by the Mitsui firm, of Tokyo. Altogether 120,000 tsubo of land will be used as site for the factory, and a great embankment for protecting the ground from inundation by the Yalu is in course of construction. The mill, when completed, will first undertake the manufacture of pulp from material gathered in the Yalu forests.

An accident prevented a father saved to his family and his family saved from charity.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Aug. 11—Expansion is the watchword all along the line of the paper and pulp manufacturing business. There will during the coming months be a great impetus imparted to the paper making industry, not only in Canada, but in the United States. Scarcely a week passes but some new financing is announced by leading companies, in order to make extensions and the securities are rapidly taken up showing that a feeling of confidence prevails. The era of development is at hand and many new projects are getting under way. Various companies, who are building model towns around their plants, are increasing the dwelling accommodation to take care of future additions to the working forces.

Trade in all lines continues good and there is every indication of higher prices prevailing while the cut of pulpwood this fall will be greater than ever. There is a strengthening of conditions all along the way and wherever timber berths are put up at auction in the various provinces, record prices are being obtained for the concessions. If the labor unrest allays itself in the near future and equipment concerns can deliver appliances within a reasonable time, there is no cloud on the horizon. The earnings of most companies are satisfactory and show gratifying gains in spite of increased outlays.

There is a good demand for all grades of paper and a general impression prevails that there will be no drop in quotations while news print and book papers will go higher this fall, due to the numerous requisitions for stock. There is a disposition on the part of many buyers now to place bookings for large consignments with the mills. During the past week there was an increase of five per cent in the price of toilet papers and mills are running far behind in deliveries. The list discount has been decreased from twenty-five to twenty per cent.

It is expected there will be an advance in wrapping papers in the near future. The ten per cent discount, which went into effect on straw board, chip board and other lines is being removed, the change taking effect on the first of next month. Paper box plants

are very active and will have a busy time of it for the next few weeks. Box board manufacturers report business good at all their mills. Manufacturers of bristol, tag and cover papers have for the present withdrawn all prices preparatory to making a new list based on the increase in the figure for sulphite pulp, which it is expected to go up considerably. There has been an advance of one to two dollars in groundwood pulp and the prevailing quotations at some mills for No. 1 is now \$30 to \$32 per ton. Jobbers report that August business so far has been most satisfactory and the outlook for fall trade continues promising. Deliveries are fair.

It is expected there will be congestion of railway traffic within the next few weeks as soon as the grain from the west starts moving. J. E. Walsh, general manager of the Canadian Manufacturers' Association and formerly traffic expert for that organization, stated this week that he fully believed there would be another jump in freight rates before many weeks in order to meet the demand of employees for higher wages and to counterbalance constantly increasing operating costs. The export situation so far as pulp and paper is concerned is more reassuring than it has been for some weeks.

Word comes from Great Britain that Canada may capture the pulp and paper trade of the Mother Country and it is said that the attitude of the English paper interests toward Canada is very favorable. The present restricted cargo space is causing Canadian mills to hold back acceptances of many good orders for future delivery, but with the shipbuilding program of the Canadian government and the releasing of larger space on ocean transports for commercial use, it is felt that it is only a matter of time before many stocks of sulphite and groundwood pulp in the Dominion are under way across the briny. Every commercial agent of the Dominion, in letters to the Intelligence Branch of the Trade and Commerce Department, calls attention to the splendid openings for Canadian paper and, if federal encouragement is lent to the development of foreign business in this line, much will be accomplished in correcting the trade balance and reducing the discount on Canadian funds.

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES <sup>8311</sup>  
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NEW YORK

Have an extensive  
and steady market  
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# KRAFT PULP

When you have  
any surplus to  
offer write us

The rag market things are booming and prices are on the increase. There are good requisitions for all grades of paper stock. Soft and white shavings are the strongest. If there is one department of the printing and paper business, which is enjoying activity at the present time, it is the poster and lithograph end. Bill posting firms have been exceptionally busy and some of the colored posters and beautifully illustrated lithos are a credit to Canadian workmen, shops and brains. Many national advertisers are using this means of publicity and some striking "Buy Canadian Made Goods" placards are seen all over the country. The price of all kinds of twines continues firm and is moving steadily upward. Jobbers and consumers are purchasing in large quantities at present values in anticipation of further raises. Coating paper plants have all the business that they can attend to in spite of the increase of half a cent on stock which went into effect three weeks ago. The consumption of every line of paper is, in fact, increasing all the while and should buying fall off some in August as it usually does, there will be heavy orders nevertheless from jobbers and large consumers in preparation for the autumn trade.

### NEW YORK MARKETS.

New York, August 9.—The paper market continues in a very firm position and business in all of its branches has undergone further expansion this week. Manufacturers in common report that they are being compelled to turn down some of the orders offered them simply because they are unable to accommodate all the business consumers and merchants are endeavoring to place. Quite a number of mills are out of the market entirely, having sold up their production for several months ahead, and, because of the uncertainty of future cost and supply of raw material, being unwilling to enter into engagements further ahead. It can be said without fear of contradiction that the paper industry in the United States is experiencing the busiest summer possibly ever in its history. August, proverbially the quietest month of the year in the paper trade, gives every promise of proving productive of fully as big business as the past several months. In fact, indications are that some branches of the trade will assume even broader proportions this month, and manufacturers, pointing to the brisk demand now prevailing and the difficulty encountered in filling all the wants of buyers, are wondering how they are to cope with the extra demand which invariably springs up in the autumn.

There is a growing market in foreign countries for American-made paper. Exporters are booking more and more orders and a greater volume of supply is moving abroad than ever before. Doubtless the scope of export business could be even further enlarged were mills in a more favorable position to handle foreign trade. The situation at present is such, however, that most manufacturers are so busily occupied in taking care of domestic customers that they have little time or little paper to devote to export business.

Prices rule firm and the tendency in most instances is strongly upward. Newsprint prices are still under Government supervision, and they remain unchanged so far as the contract basis is concerned. Indications point to an advance when Federal regulation ceases on October 1 next, however. The law of supply and demand alone would seem ample to effect this,

while increasing cost of production is another strong factor. Domestic production of newsprint at present is, if anything, less than before the war, and demand has increased with such leaps and bounds, both from domestic and export sources, that manufacturers are well nigh unable to cope with it. If foreign demand and that from publishers in this country continues at prevailing proportions there seems no doubt that prices will undergo advancement when the period of Government regulation come to an end.

The book paper market is very firm. Consumers and jobbers continue to place orders with seeming recklessness wherever they can persuade mills to accept business, and there is little question that greater activity would prevail in the market were manufacturers in a position to handle more orders. As it is, most mills are sold up to a point where they are reluctant to shoulder further responsibilities and are turning down orders except from regular customers. Machine finished book papers are quoted at around 9 cents a pound, sized and super-calendered at 8 to 9.50 cents, and coated and enamel at 11 to 12 cents.

The coarse paper market is more active and prices on all grades of wrapping are on the uptrend. Tissues are moving in consistently large volume and at strong prices. Writing papers are sought in good quantity and mills are repeatedly advancing prices. An insight into the fine paper situation may be had from the action of the securities of the American Writing Paper Company on the New York Stock Exchange during the past few weeks. American Writing preferred stock made a sensational advance of ten points per share in one day recently, while the common stock of the company has sold on the New York Curb at beyond \$16 per share, whereas only a short while ago this issue was commanding little attention at less than \$5 a share.

The demand for boards is gradually increasing and mills in the East and Middle West are now more actively engaged than in a long time. Box makers are laying in stocks for the fall and are placing orders for large quantities of board. Prices are strong and moving upward.

**Groundwood.**—The usual mid-summer firmness of tone is apparent in prices on groundwood, and many leading producers have advanced their quotations a peg during the past few days. No. 1 spruce pulp is now generally quoted at a basis of \$30 per ton for sizable lots at the pulp mill and buyers report experiencing difficulty in obtaining supplies at prices under this figure. Occasional sales are heard of at \$28.50 to \$29, but comparatively small tonnages are available at these levels, and the majority of manufacturers seem content not to do business unless securing \$30, arguing that in view of the short wood supply and increasingly unfavorable water conditions, production for the remainder of the summer must necessarily be curtailed.

**Chemical Pulp.**—The chemical pulp market is in a very firm position. Demands from various sources is on the increase and producers in a great many cases have contracted for their output for several months to come, with the result that supplies are becoming pinched and offerings are steadily decreasing. Bleached sulphite is decidedly difficult to locate in sizable quantity. The larger manufacturers in the States are out of the market as sellers, and other producers are carefully conserving such lots as they have to divert to the open market. Six cents per pound at the pulp

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

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NEW YORK CITY

Buenos Aires, Argentine.

Buy Pulp and Paper for Export  
Quotations Solicited.

is the established market price for No. 1 bleached kraft at present and buyers seeking supplies at higher figures are having scant success in doing so. Sulfite sulphite also is scarce and available amounts are firmly held at a minimum of \$70 and up to \$75 per ton at the producing mill. Domestic soda pulp is selling freely at a contract basis of 4.50 cents a pound at the mill and from 4.75 to 5 cents for spot lots. Kraft is notably stronger, with revised prices ranging from 4.25 to 4.75 cents for domestic pulp and with foreign kraft held at about the same figures.

**Rags.**—Business of fairly broad proportions is current in papermaking rags and the market is possessed of a firm undertone. Writing paper manufacturers are absorbing supplies in a steady manner and freely paying attractive prices for the material wanted, while roofing felt mills and other consumers are buying in consistent and good volume. Prices show no great change, but such alterations as have occurred have been in an upward direction. Repacked thirds and blues are selling at 4.25 to 4.50 cents at the shipping point, and purchases of No. 1 repacked white rags are reported at 7.50 cents. No. 2 packing of whites and street soiled are in steady demand and dealers are disposing of accumulations at firm prices. Roofing rags are moving toward felt mills at a basis of around 3 cents a pound f.o.b. New York. Comparatively large amounts of rags have arrived recently from Europe, but they are being absorbed by consumers without any perceptible effect on the domestic market.

**Paper Stock.**—Old papers are moving into consuming channels in a consistent way and in moderately large tonnage. Several grades are sought which pointed anxiety by mills and, with the market very nearly bare of accumulations, these descriptions are constantly commanding higher prices. Books and magazines are selling freely at 2.15 to 2.25 cents f.o.b. New York and soft white shavings of No. 1 quality at 4 cents. Mixed paper also is an active grade and box board manufacturers are paying in the neighborhood of 65 cents per hundred pounds New York for sizable tonnages. Folded news is relatively in less demand than mixed, but sales are fairly frequent at a price range of 70 to 80 cents at the point of shipment. Hard white shavings are firm at a quotational range of 5 to 5.25 cents a pound, while kraft paper of No. 1 grade is selling at around 3 cents New York. Dealers and packers in general express gratification with the present condition of the market and say they are enabled to operate at a fair margin for profit on prevailing prices.

**Bagging and Rope** — Old Manila rope is quotably steady and moving to mills in good volume. Fresh demand has eased up a bit, but most sellers are still making shipments on orders placed by manufacturers a short time ago, and available supplies are consequently being readily disposed of. No. 1 domestic rope is selling at around 5.75 cents a pound at the point of shipment, with reports heard of some transactions at 6 cents. Scrap bagging is slightly higher in price, around 3 cents being the accepted market quotation for No. 1 packing.

#### NORTH AMERICAN PULP REPORT.

The trustees of the North American Pulp and Paper Companies Trust have made, it is said, the following consolidated report of operations of the subsidiary companies for the year ending December 31st, 1918. The companies comprised in the report are: North Amer-

ican Pulp & Paper Companies Trust, La Cie de Pulp de Chicoutimi, The St. Lawrence Pulp & Lumber Corporation, La Cie Generale du Port de Chicoutimi, La Cie du Chemin de Fer Boreal-Saguenay, The Chicoutimi Freehold Estates, Limited, La Societe d'clairage et d'Energie Electrique du Saguenay.

So many inquiries are made regarding this company, that the report is given as received from headquarters.

#### North American Pulp & Paper Companies Trust and its Subsidiary Companies.

Consolidated Profit and Loss Account For the Year Ended 31st December, 1918.

Sales and Gross Operating Revenues . . .	\$4,268,367.86
Cost of Sales and Operating Expenses . . .	3,283,199.18
Gross Operating Profit . . . . .	985,168.68
Other Income . . . . .	501,559.20
Total Income . . . . .	1,486,727.88
General Expenses . . . . .	287,198.39
Net Income . . . . .	1,199,529.49
Bond and Other Interest . . . . .	757,301.58
Sinking Fund . . . . .	442,227.91
Amortization of bond discount, etc. . . .	261,730.00
Carried to surplus account . . . . .	180,497.91
Carried to surplus account . . . . .	142,492.17
Carried to surplus account . . . . .	\$ 38,005.74

#### Assets.

##### Fixed Assets:

Timber Lands, Water Powers, Mills, Equipment, Real Estate, Railroads, Ports and Equipment (At Book Value), Investments at Par . . . . .	18,941,112.70
J. E. A. Dubuc (Bond Account) . . . . .	241,000.00
Reservoir Lac Kenogami (Cost to Date) . . . . .	723,600.00
Deferred Payments on Land Sold, Etc. . . . .	223,131.49
Deferred Payments on Land Sold, Etc. . . . .	13,562.18

##### Current and Working Assets:

Cash in Banks and on Hand . . . . .	\$ 142,575.16
Notes Receivable . . . . .	71,681.67
Accounts Receivable . . . . .	365,109.88
Pay Roll Deductions . . . . .	9,834.61
Due from Associated Companies . . . . .	101,494.14
Advances to Contractors . . . . .	73,329.17
Life Insurance Policy, Surrender Value . . . . .	13,266.66
Pulp and Pulpwood on Hand at cost . . . . .	1,057,898.26
Pulp and Pulpwood on Hand at selling value . . . . .	919,808.46
Inventories of Supplies On Hand . . . . .	991,955.66
Total Current and Working Assets . . . . .	3,746,913.67

##### Sink Funds:

Funds on Deposit with Trustees . . . . .	206.65
Payments Due and Accrued per contra . . . . .	225,949.45
Total Sink Funds . . . . .	226,156.10

Miscellaneous Assets in Suspense . . . . .	36,975.47
Charges Deferred to Future Operations . . . . .	102,244.80
Total Assets . . . . .	\$24,254,696.41

# What is the repair cost of your screen?

SO FAR the sales  
of repair parts for  
**BIRD SCREENS**  
are less than 1% of  
the sales of the screens  
Some screens have  
been running for  
three years

*Write for catalogue 1A*

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**EAST WALPOLE MASS.**

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<b>Liabilities.</b>		
Capital Stock . . . . .		
Authorized . . . . .		
20,000 Share 6% Cumulative Preferred Stock of \$100.		
Par Value		
1,000,000 Shares Common Stock of no Par Value Issued:		
15,901 Shares 6% Cumulative Preferred		
999,760 Shares Common Stock.		
Issued for Considerations as follows		
For Securities of Subsidiary Companies . . . . .		
Par Value \$3,720,100.00:		
11,701 Shares Preferred Stock . . . . .		
515,000 Shares Common Stock . . . . .	\$ 3,935,420.13	
For Cash:		
140,000 Shares Common Stock . . . . .	3,169,941.17	
For Securities of Tidewater Paper Mills Co. (Now Sold for \$252,959.09):		
4,200 Shares Preferred Stock . . . . .		
4,760 Shares Common Stock . . . . .	252,959.09	
For Securities of St. Lawrence Pulp & Lumber Corporation (Now Sold for \$277,566.05):		
40,000 Shares Common Stock . . . . .	277,566.05	
	7,635,886.44	
Minority Stockholders' Interests in Controlled Companies . . . . .	952,759.27	
Funded Debt of Subsidiary Companies in Hands of Public . . . . .	9,328,673.34	
	11,517,319.05	
		\$24,254,696.41
		4,687,098.80
		176,870.46
		635,485.63
		502,002.53
		1,137,488.16
		4,687,098.80
		176,870.46
		635,485.63
		502,002.53
		1,137,488.16
		\$24,254,696.41

The small profit is attributable, it is said, to the unfortunate results shown by one of the company's properties where a loss of \$400,000 or thereabouts was shown. It is believed that the cause of the loss

# GRACE & CO., LIMITED

## MONTREAL, QUE.

**EXPORTERS & IMPORTERS.**

**BLEACHED — EASY BLEACHING — UN-  
BLEACHED PULP — KRAFT PULP —  
GROUND WOOD PULP**

**KRAFT WRAPPING — SULPHITE WRAP-  
PING — MANILAS — FIBRES — BOX-  
BOARDS.**

**NEWSPRINT — WRITINGS — BONDS —  
LEDGERS — OFFSETS —  
COATED BOOK & BOARD.**

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**MATTAGAMI  
PULP & PAPER CO., LIMITED**

BANK OF HAMILTON BUILDING - TORONTO, CANADA

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**Strong Easy  
Bleaching Sulphite Fibre**

Manufactured from Clean Sound Spruce

New Modern Mills at SMOOTH ROCK FALLS, ONTARIO

Bleached and Unbleached

**WOOD PULP**

of every description

---

**M. GOTTESMAN & COMPANY**

Incorporated

18 E. 41st Street

New York, N.Y.

Established 1886

has been eliminated, and the statement is made that in two changes alone a leak of no less than a quarter of a million was stopped. There is every reason to believe that this particular plant will show a good profit hereafter.

#### PILING WATER.

Will water pile up and not run off? Let's see, says the Crown-Willamette Mill Paper.

In a pulp pile 100 feet wide, 400 feet long, 40 feet high, or 1,600,000 cubic feet of lap pulp at 15 pounds per cubic foot dry weight, will be found 12,000 tons of pulp. This pulp will average only 33 1-3 per cent dry, so there is piled with the pulp 24,000 tons or 48 million pounds of water, which at 8 1-3 pounds per

gallon shows 5,762,300 gallons of water piled 100 feet wide by 400 feet long by 40 feet high; as much water as the cities of Oregon City and West Linn bring in through their 16-inch mains in two days. 5,762,300 gallons of water at 7½ gallons per cubic foot, equals 770,360 cubic feet of water or 48 per cent measurement of the original cubical contents of the pile, and 66 2-3 per cent weight is water.

Men are employed to pile pulp. Two-thirds weight of what they pile in water — they really pile water.

Now for some press manufacturer to figure out how many man-power and how much cash would be saved by pressing the pulp to a moisture content of, say, 40 per cent.

## CANADIAN KRAFT LIMITED

THREE RIVERS, : : CANADA.

Dealers in

### WAYAGAMACK Sulphate Pulp and Kraft Paper, Glazed and Unglazed.

Agencies

CANADA—Pulp and Paper: Hodge-Sherriff Paper Co., MacKinnon Bld., Toronto.

GREAT BRITAIN, IRELAND & FRANCE—Paper: Hodge-Sherriff Paper Co., Craven House, Kingsway, London, W. C. 2.

UNITED STATES—Pulp: The Pulp & Paper Trading Co., 21 E. 40th St. New York.

## J. & J. MAKIN, Limited

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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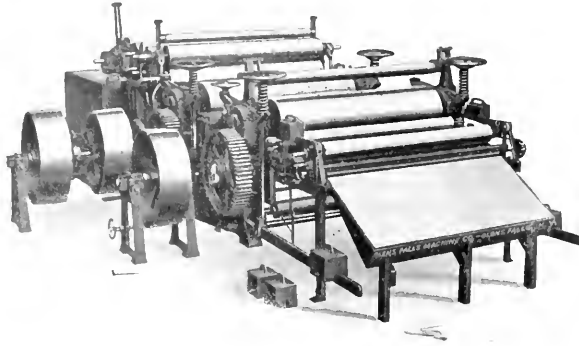
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# EDITORIAL

## EVERY TUB ON ITS OWN BOTTOM.

The American Economist, a high protective organ, publishes the following, says the Montreal Journal of Commerce:

"We quote from the advertisement of a Canadian bank in the Free-Trade New York Times, as follows:

"Canadian-American Paper Trade — during the last fiscal year Canada exported approximately \$100,000,000 of pulp, paper and pulpwood. Eighty-two per cent came to the United States. This phenomenal growth of a basic Canadian industry and the part which the American trade has played in it is shown by the following tabulation:

	Fiscal year ending March:		Inc.
	1919.	1918.	P.C.
Canada's total export	\$99,260,000	\$71,820,000	27.6
Export to U. S. . . . .	\$2,090,000	67,028,000	81.7
Per cent to U. S.—	82.7.		

From this it will be seen that over eighty-two million dollars in value of paper was exported from Canada to the United States in one year, which represents eighty-one and seven hundredths per cent. increase of exports of paper and pulpwood to the United States.

### Why?

Because Canada prohibits the export of spruce and spruce logs to the United States. If we place a good stiff duty on pulp, paper and pulpwood, Mr. Canada would come to his senses very quickly, and we earnestly ask that the Ways and Means Committee, House of Representatives, and Finance Committee, U. S. Senate, will give American producers a fair chance. We can compete with spruce on equal conditions, but when Canada prohibits the export of spruce and spruce logs it is time for Congress to take action."

So some of the people in the United States, at least those who are alarmed at the rapid and solid growth of the pulp and paper industry in Canada, think that by placing a high tariff on pulp, paper and pulp wood the American producers of these materials would have a better chance of success. We think that the composer of this observation is not quite correct in what is evidently his fundamental assumption. It is apparent from his last sentence that he thinks the United States has practically unlimited resources of spruce within economical transportation distance of manufacturing centres. He also assumes that Canada has prohibited the export of spruce wood and it seems that in his mind spruce is the only raw material consumed by pulp and paper mills.

As a matter of fact the placing of a duty of any dimensions within the limits that Congress would dare to go would simply be adding more expense to the consumer without giving the producer any benefit whatever. The fact is that the forests in the neighborhood of mills producing pulp and paper reasonably near

large centres of consumption have been practically wiped out by fires and unwise lumbering methods until some mills have actually been starved out and driven across the line into Canada, where American capital has been largely responsible for their erection and the production of paper for the American market. The newspaper publisher who is the large consumer of Canadian paper would find it hard to reconcile the imposing of a duty on his raw material with the established relations between politicians and newspapers. The paper mills in the United States which are to a very considerable extent dependent upon imported pulp would simply have to pass on the extra cost of their imported raw material to the consumer who already thinks prices are high enough. It would be hard to conceive of a United States Congress placing a duty on Canadian products which did not apply to similar materials from other countries and so the manufacturer of paper would get no advantage whatever from such a proceeding. As to manufacturers of pulp, it is well known that a large number of American pulp mills depend for their existence on the import of Canadian pulpwood. This is not prohibited as the author of the statement given above would indicate since the embargo on pulpwood applies only to material cut on crown lands. So we see that putting a duty on pulpwood would be of no advantage to the manufacturer of pulp but would simply put an additional difficulty in the way of his producing paper pulp at a price which would permit him to compete with the few fortunate concerns who still have pulpwood resources of their own.

The difficulty about the whole situation really is that the Eastern and Central States simply do not have the necessary resources of timber for the maintenance of the pulp and paper mills located east of the Rocky Mountains and what supplies are left are rapidly being depleted. The result has been that increasing quantities of pulpwood have been exported from Canada, even in spite of the embargo on pulpwood cut on crown lands, which went into effect a number of years ago. It is not a case of competition, but it is a case of production in the most economical way and under the most favorable circumstances. It is quite natural and right in the case of a pulp or paper mill that has been established in the United States and around which a town has sprung up, and which has been home for many of the employees and their families, that both the investment and the sentiment should be maintained. In many cases where an inprovident management has in the past wasted the forest resources of the company, or where the mill was established without a sufficiently extensive timber limit, a new source of supply had to

—found. Canada seemed to have plenty of wood and good transportation facilities made it easy of access. It was natural then that these mills should turn to as for raw material. In the erection of new mills, a practically permanent wood supply necessarily influenced the policy of the management, and it was natural in such cases that most of these mills should be erected North of the boundary. The policy of an embargo on wood cut on crown lands has had something to do with this trend of development, but that is not the only factor by any means.

It would take a lengthy discussion to cover all the phases of embargos, tariffs, etc., but it has always been our personal opinion that the proper place for the establishment of an industry is where the raw material is indigenous. This would naturally make Canada the home of industries, depending on forests, farms, fisheries and certain product of the mine. The resources of the U. S. are so vast and varied that a catalogue of only the principal ones would require a great deal of space. There are of course, exceptions to this general theory, such as the necessity of employing the whole population and also of maintaining what might be called emergency or accommodation industries, where raw material must be imported. Such industries are more necessary in some countries than in others, where perpetually friendly relations as between Canada and the United States exist. It is largely industries of this kind that require, and, in most instances, deserve a measure of production in the way of import duties. The presence of occasional plants of this kind is very much like the need of the retail store, and the jobber who must be depended upon for filling an emergency when the regular source of supply temporarily fails, but with industries as in other respects we believe that national policies should encourage every tub to rest on its own bottom, although it may be advisable to hang the pail on a hook or put the piteher in a cupboard.

#### HOW TO STAND STILL.

It is perfectly easy to stand still. The world is full of the immobile sort of people whose feet are so firmly planted just where they happened to land that the moss is growing over their shoes. This shows that it must be a very simple thing to do.

You can stand still by doing just exactly what you are paid to do and carefully avoiding any little extra job which does not figure in your time-sheet.

You can stand still by making everything you do for the boss spin out as long as possible, keeping one eye on the clock and the other upon your task so that you may easily check any tendency toward undue haste.

You can stand still by making it apparent that you believe there is no relation whatever between the firm's interests and your own interests; that the troubles of the boss are nothing to your young life.

You can stand still by paying no attention what-

ever to the other fellow's job, thus avoiding the possibility of learning something outside your own little sphere of action.

But why stand still?

Why not cheerfully turn your hand to anything that comes along without worrying about whether it is exactly what you are paid to do; why not admit that the firm's interests are your interests, and act like it; why not learn what you can by watching the other fellow and be ready to take his place should an emergency arise; why not speed up your job—and get somewhere?

This excellent advice is given to residents of Grand Mere by the editor of *Le Digesteur*. It would be hard to find a better precept for these days of tendency to "take it easy."

#### COBWEBS.

A Canadian friend in London writes as follows: "I am very pleased to tell you that the attitude both of the manufacturer in England and the consumer is one of the utmost cordiality towards Canadians and Canadian products. In fact, in all discussions that I have had regarding policy of protection, Canada has been considered as part of England for the purpose of argument; in other words, every Manufacturer concedes the desirability of Canada being given the utmost preference. There has been no indication as to what the Government policy will be. If anybody knows it, it is being kept very secret, and it looks as if there will be no announcement made until towards the end of the month."

That is just as it should be. The Canadian pulp and paper industry is practically an inseparable unit and can be of great service in helping to re-establish the mills and dealers in England by co-operation and mutual understanding. It would be a grievous mistake for Canadian mills to take any economic advantage whatever of the temporary restrictions and difficulties which beset our British brethren. Now is the time to sweeten the cup of our mutual relations. Please don't put gall in it.

The late editress of the Spanish River News has gone home wearing a diamond ring. It was given as a token of friendship and good fellowship by the staffs of the Spanish River Mills. The Pulp and Paper Magazine would also send good wishes to Miss Julyan, during whose editorship of one of our best mill papers there has been a very cordial relationship between the two journals that we hope will always continue.

The decision of the Paper Control Tribunal is expected any day now. It had better come soon, or the public will have forgotten what it is all about, and say, "Another waste of the people's money."

It is understood that the dove of peace is hovering over Washington trying to find a place to light.

# The Suitability of Second Cut Cotton Linters, Cotton Shavings and Hull Fibre for Paper Manufacture\*

By OTTO KRESS<sup>1</sup> and SIDNEY D. WELLS.<sup>2</sup>

In consequence of the eternal struggle to keep down manufacturing costs and to utilize waste materials, considerable interest attaches to the careful and extensive investigation of the use in the paper mill of cotton linters, etc., by the Forest Products Laboratory at Madison, Wisconsin. Desultory attempts have been made by paper-makers, but few of them know the properties and characteristics of the material in hand. This is just the kind of fundamental information a governmental laboratory should furnish.—Ed.

The Salvage Board of the Ordnance Department, U. S. Army, recently requested the Forest Products Laboratory, Madison, Wisconsin, to assist, if possible, in determining the value of cotton linters and hull shavings for the manufacture of paper pulp. The War Department had on hand, at that time, a large tonnage of munition linters and cotton shavings bought by the Government for the production of nitro cellulose. With the ending of the war, the Salvage Board was concerned with the proper disposal of these raw linters and shavings and also of a much smaller amount of bleached linters prepared in a condition ready for nitration. The available supply of Government linters and shavings has just recently been sold, but the possible production of a large annual tonnage of second cut linters and hull shavings makes these products of decided interest to the paper industry.

The writers are aware that second cut cotton linters have been used in the past, to a limited extent by the paper industry and that their use was discontinued by the introduction of the cheaper wood pulps. Conditions, however, have changed, the oil mills have installed to a large extent (in view of the Government needs for fibre for nitro cellulose production), the necessary equipment to receive a larger cut of second cut linters and hull fibre than was ever removed under pre-war conditions. Bleached sulphite and soda pulp will not return to the pre-war selling price, and with the increasing cost and scarcity of pulp wood, the writers believe that second cut cotton linters and hull fibre can successfully compete in quality and price with chemical wood pulp and certain other paper stocks.

Cotton linters before the outbreak of the European war, were largely used as a stuffing material for pads, mattresses, upholstery, horse collars, cushions, etc. Other large uses were for the manufacture of smokeless powder both for army and sporting purposes, pyroxylin, varnishes and plastics and for a number of other minor uses. During the European war, cotton linters were largely diverted to the manufacture of gun cotton and smokeless powder. On the entry of the United States into the war, the oil mills co-operated with the Government by taking off a larger cut of linters and shavings and turning them over to the proper officials for allocation.

The writers are not familiar with, or experienced in the operation of the oil mills where cotton linters and hull shavings are produced, but the following information was obtained from a personal interview and correspondence with some of the largest producers of these products.

The cotton seed after having passed through the ginning process for the removal of the long staple cotton is shipped to the oil mills. In general, the cotton seed has adhering to it approximately 200 lbs. of fibre per ton of seed. Prior to 1915, it was generally customary to take off a cut of 40 lbs. to 60 lbs. per ton of seed, the balance being left adhering to the hull. With the increased demand for linters occasioned by the tremendous production of nitro cellulose, it was found that with more adequate machinery the output of linters and hull shavings might be increased to 180 lbs. per ton of seed. It was estimated that the output per ton of seed, during the year 1915-1919, averaged 125 lbs. per ton of seed against a pre-war production of 40 lbs. to 60 lbs. per ton of seed.

Fig. A shows clearly the typical appearance of the raw cotton seed and the seed after the removal of varying amounts of fibre. Illustration No. 1, Fig. A, is typical of the raw cotton seed as received at the oil mills and has approximately 200 lbs. of fibre ad-

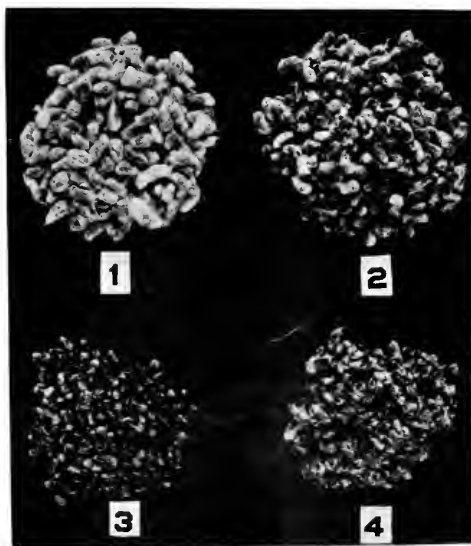


FIG. A.

- 1—Sample Cotton Seed as Received at Oil Mill.
- 2—Cotton Seed after Removal of 75 lbs. Cut per ton of Seeds.
- 3—Cotton Seed after Removal of practically all Fibre.
- 4—Cotton Seed Hulls after Removal of 75 lbs. Cut. 75 lbs. Hull Fibre left.

\*Read at the June Meeting of the Technica Association of the Pulp and Paper Industry, Buffalo, N.Y., June 12, 1919.

<sup>1</sup> In charge, Section of Pulp and Paper.

<sup>2</sup> Engineer in Forest Products.

seed. Illustration No. 2, Fig. A, shows the seed after having been passed through the regular lint machine for removal of 75 lbs. of lint. Illustration No. 3, Fig. A, shows the seed after removed on practically all of the lint after passing the seed through the regular lint for removal of 75-100 pounds of lint and then through a special delinting machine where an extra cut of from 75-100 lbs. is removed by means of carbundum wheels or plates. This lint is practically free from hull fragments. Unfortunately only a specimen of a few pounds of this sample was received at the Laboratory, and no pulping trials were made of it. The freedom from hull fragments and comparatively long fibre would make this an extremely interesting possible raw material, as it could undoubtedly be pulped with a lower chemical consumption than either of the shipments of the Government hull shavings or the hull fibre received from Memphis, Tennessee. Illustration 4, Fig. A, represents cotton seed hulls, after removal of a 75 lb. cut and removal of the cotton seed kernels, which are press-

edicate the tremendous increase in the consumption of linters!

1909	119,185 bales.
1910	177,211 "
1911	206,561 "
1912	238,237 "
1913	303,009 "
1914	307,325 "
1915	411,845 "
1916	880,916 "
1917	869,702 "
1918	1,118,840 "

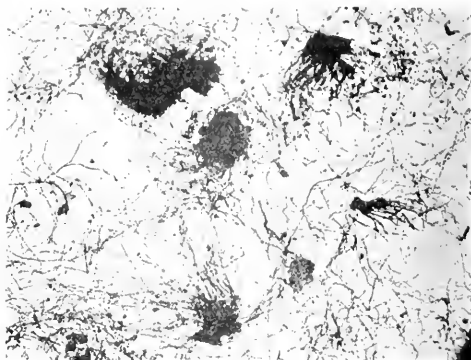


Fig 1.—Raw Shavings.

There is evidently available for the peace time demands of the country, a supply of over 700,000 bales for uses other than for which cotton linters have been used in the past. At 500 lbs. to the bale, this corresponds to a production of 175,000 tons, equivalent to a little less than 600 tons of raw material per day (on a basis of 300 working days per year.)

Considering the possible production of second cut linters and shavings in relation to the total tonnage of cotton seed annually crushed by the oil mills gives another method of arriving at an estimate of the total amount of fibre available to the paper industry.

There is an annual production of approximately 4 to 4½ million tons of cotton seed. Assuming that all of the oil mills installed the necessary equipment and removed a 100 lb. cut of de-lint or hull fibre (after first cutting a 75 lb. cut for the mattress trade), there

A bale of linters weighs approximately 500 lbs.



Fig. 2.—Raw Linters.

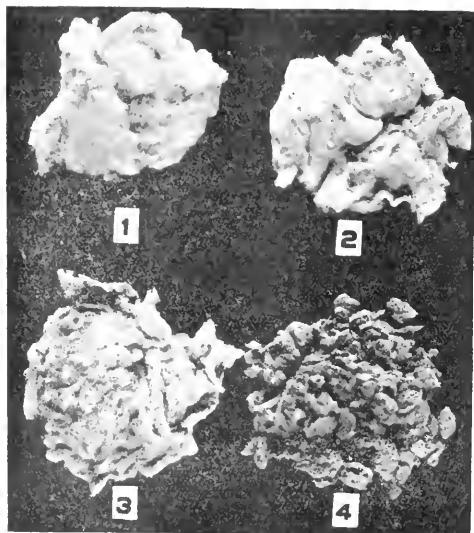


FIG. B.

- 1— 50 lbs. Cut per ton of Seeds.
- 2 - 75 lbs. Cut per ton of Seeds.
- 3—160 lbs. Cut per ton of Seeds.
- 4—De- Lint, Practically all fibre after Removal 75 lbs. Cut.

ed for oil recovery. These partly delinted hulls have an additional 75 lb. cut removed by passing the hulls between steel attrition mills which shave or cut the lint from the hulls. This hull fibre was pulped in cooks q and r, producing a good grade of pulp.

Illustrations 1, 2 and 3, Fig. B, show the lint produced by respective cuts of 50 lbs., 75 lbs., and 160 lbs. per ton of seed. Illustration No. 4, shows the de-lint representing all the fibre removed by means of carbundum wheels or plates, the original seed having been passed through a linter for removal of a 75 lb. cut, suitable for the mattress trade.

The following figures taken from Bulletin 137, Bureau of Census, Department of Commerce, clearly in-



would be available annually 200,000 tons of this product or a little more than 650 tons per day. This estimate is based on information supplied by various producers and the calculation made on the crushing of an annual production of four million tons of cotton seed.

Further, there is no object in not attempting to utilize this fibre, as leaving it on the seed is detrimental in the subsequent extraction of the oil from the seed. Neither has the fibre any feeding value when mixed with the cotton seed meal. The increase in fibre yield above 75 lbs. per ton of seed means, of course, that the average length of the fibre is less and that a percentage of small hull fragments will be present. The fibre, however, is of better length than the ordinary high grade paper fibre, while the hull particles can be removed practically completely by proper cooking of the fibre.

The Laboratory received through the War Department a shipment of cotton linters and hull shavings. A microscopic examination of the raw shavings revealed the following interesting data:

Average length of fibre . . . . .	2.41 m.m.
Longest fibre . . . . .	8.00 m.m.
Shortest . . . . .	.51 m.m.

Fibres under 1 m.m. . . . .	16%
Fibres under 5 m.m. . . . .	88%
Fibres over 5 m.m. . . . .	12%

Average length of fibres under 5 m.m. . . . .	1.83 m.m.
Average length of fibres over 5 m.m. . . . .	6.69 m.m.

One hundred small black specks to seven fibres with occasional larger fragments of hulls.

The appearance of the shavings under a magnification of 25 diameters is shown in Fig. 1.

The raw linters on microscopic examination gave the following fibre length data:

Average length of fibre . . . . .	4.62 m.m.
Longest fibre . . . . .	25.44 m.m.
Shortest fibre . . . . .	.80 m.m.

Fibres under 5 m.m. . . . .	74%
Fibres over 5 m.m. . . . .	26%

Average length of fibres over 5 m.m. . . . .	10.89 m.m.
Average length of fibres under 5 m.m. . . . .	2.39 m.m.

One black speck to 60 fibres.

The typical appearance of raw linters is shown under a magnification of 25 diameters in Fig. 2.

<sup>1</sup>The writers wish to acknowledge the services of Miss G. J. Griffin of our Laboratory, who made these and the other fibre measurements.

(To be continued.)

### JAP PAPER CLOTH IN SOUTH AFRICA.

Cape Town.—Japanese paper yarn is arriving and has entered the market of South Africa.

Paper yarn made in Europe during the war, mostly in Germany and Austria, was chiefly from chemical wood pulp, but Japanese paper yarn is made from much tougher paper, in the manufacture of which the inner fibrous bark of the mulberry and other trees is used. It is fine, elastic, strong and of glossy appearance. Externally, it looks like linen yarn rather than cotton. Paper cloth is no new thing in Japan; as long ago as fifty years it was very popular for woman's summer clothing.

### FABLES FROM MILL PRACTICE—I.

By H. TUESS.

The chemist of the Wake and Doin Paper Company glanced through his matudinal bunch of memoranda from the office—invoices to check, car numbers for supplies of bleach, alum and size. He found his requisition for a pound of ammonium chloride with the corner turned down, and the following query by the senior partner inscribed thereon in blue pencil, "Is this *absolutely* necessary? Every effort must be made to reduce laboratory expense." This he threw into the waste basket, and wrote another requisition for *five* pounds, followed by his resignation. This also went into the basket.

One of the yardmen came in to have a lacerated hand bandaged.

"Ain't y'afraid that glass'll break? Queer how it don't, with that heat under it."

"What happened your hand, Mike?"

"Bill tried to inclood it in a drum of bleach he wuz hookin' over." "Say, that don't smart any—No. What's the use o' putting all that clean white rag on? Might as well get some from the rag room for me."

The chemist was just getting started on his favorite pastime: inventing a new flotation test on china clay, when the junior partner, Mr. Boutan Doin, rushed in.

"Say, Test Tubes, what will dissolve belt dressing?"

"Depends on its composition: rosin compounds will dissolve in ether or alcohol, and rubbery ones in carbon bisulphide. What's the trouble?"

"Well, get some of each of those, and come down to No. 5 machine.

On arrival at No. 5 machine, first glance suggested accident. The machine tenders were carrying the "super," a slight, elderly man—on a plank. He was holding a wire brush in his hand, and the bearers dispelled the accident theory by showing super, plank and all under the machine wire, just in front of the dandy roll. The wire was a new one, and No. 5 was a hundred and twenty inch face.

"Let the old man alone a moment, he thinks he can do it."

"Do what?" said the chemist, looking at a point about the middle of the wire where the "Old Man" could be seen below vigorously scrubbing the wire with his brush.

"Why, you see some hypertrophied ass"—the Junior Partner derived his expletives from anatomy, having been conditioned in that subject in second-year medicine and going no further—"dropped a wad of belt dressing on the wire, and the Old Man tried to rub it off, but the more he rubbed, the worse it spread. You try your ether now."

So the Old Man was extricated on his plank, looking very flushed, and describing the author of the spot in appropriate language.

The chemist climbed to a plank placed across the frame, looked at the spot, and said: "I can't do anything with this—it's *burned* in. What did you do to it?"

It appeared that the painter, en passant, had been approached, and he, in an off-hand way, had advised using the gasoline torch.

The chemist tried ether (the spot was resinous), and, in turn, alcohol and carbon bisulphide—the latter occasioning much comment on the part of the machine tenders; but to no purpose.

"Run her 'round awhile," said the superintendent,

up a 1/2 inch patch, surrounded with buckled wire, would not wear or smooth out. The new one hundred twenty grain wire had to be taken off, and a rush order wired to the maker for a second one.

The chemist returned to his "lab." moralizing.

**THE NAILING OF BOXES.**

Observations of packages which have failed in service and tests on packing boxes by the Forest Products Laboratory, Madison, Wis., have shown that the most common defect in box construction is inadequate nailing. Attempts to strengthen boxes by the use of thicker lumber without regard for nailing very often only waste material. The extra wood may not be needed so much as a few more nails. With such heavy material as paper, the proper making of the box is very important.

As an aid in determining whether or not a box is adequately nailed, the laboratory offers the following information:

**Box Woods Grouped According to Nail Holding Qualities and Other Properties.**

The woods commonly used in box construction may be divided according to nail-holding ability and other properties in box woods, into four groups, as follows:

Group I—Alpine fir, Aspen, Balsam fir, Basswood, Buckeye, Butternut, Cedar, Chestnut, Cottonwood, Cucumber, Cypress, Jack pine, Lodgepole pine, Magnolia, Noble fir, Norway pine, Redwood, Spruce, Sugar pine, Western yellow pine, White fir, White pine, Willow, Yellow poplar.

Group II—Douglas fir, Hemlock, Larch (Tamarack), So. yellow pine, Va. and Car. pine.

Group III—Black ash, Black gum, Maple, soft or silver, Pumpkin ash, Red gum, Sycamore, Tupelo, White elm.

Group IV—Beech, Birch, Hackberry, Hickory, Maple, hard, Oak, Rock elm, White ash.

All the species in one group are used interchangeably as regards thickness of material, and size and spacing of nails.

**Kind of Nails.**

Tests have shown that cement coated nails have a holding power from 10 to 30 per cent greater than that of uncoated nails. Smooth nails are more effective than barbed nails.

**Size of Nails.**

The penny of nail to be used in any case is determined by the thickness and species of wood in which the point of the nail is held after driving. The following schedule is based upon standard cement-coated box nails. If the designated penny of nail is not available, use the next penny smaller and space nails proportionately closer.

**Schedule of Nail Sizes.**

Thickness of ends or cleats to which sides, tops and bottoms are nailed.

Species of wood holding nails	3-8"	11-16"						7-8"
	or less	7-16"	1-2"	9-16"	5-8"	3-4"	13-16"	

**Size of Cement Coated Nails.**

Group I	4d	5d	5d	6d	7d	8d	8d	9d
Group II	4d	4d	5d	5d	6d	7d	7d	8d
Group III	3d	4d	4d	5d	5d	6d	7d	7d
Group IV	3d	4d	4d	4d	4d	5d	6d	7d

**Spacing of Nails.**

Space nails holding boards to end grain of end 1 3/4 inches apart and nails holding boards to side grain of end 2 inches apart, when nails are 6 penny or less. Increase spacing of nails 1/4 inch for each penny over 6. No board should have less than 2 nails at each nailing end. Space nails holding top and bottom to sides 6 inches or more apart, when nails are 6 penny or less, increasing the spacing 1 inch for each penny over 6.

While such spacing may appear to be too close, as a matter of fact, it calls for only about two-thirds of the number of nails which would cause excessive splitting of the ends, and only about two-thirds of the number required to balance the strength of the nailed joints with the strength of the box in other respects. With the spacing given above, the nailing is still the weakest point of the ordinary box.

**THE STANDARDIZATION OF SHOE BOXES.**

At the first convention of the National Shoe Retailers of Canada held in Toronto recently, one of the subjects which came up for discussion, was the matter of the standardization of shoe cartons. This is a question which has been before the trade for the past thirty years. At a meeting of the Canadian Shoe Manufacturers held in Montreal last spring, the topic was referred to in an admirable address by Art Harris, late President of the Canadian Paper Box Manufacturers' Association, and a resolution was passed in favor of standardization. One step farther has now been taken by the retailers of the Dominion approving of the move and authorizing its executive council to take the problem up with the Canadian Shoe Manufacturers' Association.

Paper box manufacturers recognize that if the retailers and manufacturers can come together on this subject and agree upon lengths, widths and depth for men's, women's and children's footwear, it would result in the saving of much time and labor in manufacturing as well as material, would reduce expense and increase the output of boxes all around and prove convenient and acceptable in many other ways.

The reason that greater progress has not been made is the extreme difficulty of standardization acceptable to both the manufacturer and the retailer, but it is now felt that, through the national organizations of both bodies this may be effected much to the relief and satisfaction of the paper box maker, who, in busy times is tired of turning out small, special lots of boxes for this and that shoe manufacturer, involving extra labor and waste of material. The price of box board is going up all the time and is likely to continue to increase. Here is a case where standardization would mean economy and conservation to all concerned and no particular interest would suffer.

# Notes on Lime Sludge Recovery

By B. C. HOPE,

Associate of B. M. Baxter, Consulting Engineer, Cleveland, Ohio.

In the past, there seems to have been very little reading matter published in the various Paper Trade Journals on the subject of lime sludge recovery plants applied to soda and sulphate pulp mills for the reclamation of the calcium oxide from the calcium carbonate resulting from the preparation of the cooking liquor. Owners of mills operating lime sludge recovery systems usually do not care about giving out any first-hand information; consequently, very little operating data is available.

There are, at the present time, several such plants being successfully operated and from information available there seems to be no reason why a lime sludge recovery plant should not become a necessary part of the equipment needed in moderate sized soda and sulphate pulp mills, both from the standpoint of the saving effected in lime purchased and the elimination of the pollution of water courses which, in some localities, is prohibited by law. There is also another small saving and that is about 2 to 3% of Na<sub>2</sub>O on the basis of the wet sludge is reclaimed along with the lime.

At the present time, all lime sludge recovery plants are similar as far as the apparatus is concerned and only differ from one another in the arrangement and make of the apparatus. Their successful operation, of course, depends to a large extent on the correct proportioning of the units which go to make up the plant and to a large extent also on the manner in which the plant is operated after the initial starting up.

The most important and primary step in treating the lime sludge preparatory to burning is the removal of as much water as possible which amounts to between 52 and 60% of the weight of the sludge on the wet basis. The evaporation of water from a material, as we all know, requires heat and in order to keep this factor down to a minimum it is therefore very necessary to remove as much water as possible from the lime sludge before subjecting it to burning. The most satisfactory and economical way of removing the water is by mechanical means, i. e., by mechanical thickening and filtration. The size of the thickener depends on the tonnage of the sludge to be handled per hour, the rate of settling and the angle of repose and it is therefore necessary to determine this and also to have a complete analysis of the sludge before attempting to proportion any of the apparatus. By mechanical thickening, the water content of the sludge, as it usually comes from the causticizers, can be reduced about 12%.

After the process of thickening, the thickened sludge is conveyed to a filter which again reduces the water content by about 10%, making in all a total water removal of about 22% on the basis of the wet sludge. There are various types and makes of filters on the market, but the most satisfactory type is the rotary vacuum filter with a metallic cloth of such a mesh as to be suitable to the degree of fineness and porosity of the sludge being filtered. The rotary type is preferable to the pressure type for the reason that it is continuous and requires less labor to operate it than the pressure type does. Instead of a metallic cloth, some plants are using No. 12 cloth duck when the percentage of caustic is low and are getting satisfac-

tory results with cakes leaving the filter from  $\frac{3}{8}$ " to  $\frac{3}{4}$ " thick, and in a chemical plant operating in Oklahoma, the writer understands that 1" cake is being obtained from a rotary type filter. The size and number of filters required depends on the amount of the sludge being handled per hour, its porosity and its water content. Knowing these items, it is an easy matter to calculate the total weight of the cake discharged from the filter.

The thickened sludge is admitted to the filters by means of a diaphragm or centrifugal pump and the filters should be set high enough above the thickener inlet so that the sludge overflow from the filters will flow back to the thickener by gravity. The filters are usually set on the dust chamber at the inlet end of the kiln so that the filtered cake can fall by gravity into the kiln through a heavy cast iron spout, thus doing away with the necessity of any conveyors which otherwise would be needed if the filters were set below the inlet to the kiln.

The vacuum carried on the filters is maintained by means of either a belt-driven or a steam-driven vacuum pump and the size of the pump is determined from knowing the number of square feet of unsubmerged filter surface or the total filter surface if the rotary type is used. Between the vacuum pump and the filter, there should be a receiver containing a float operating a vacuum release so as to prevent any water being carried over into the vacuum pump. The water is removed from the receiver by means of a centrifugal or Connorsville type pump and the inlet to the pump should be at least two feet below the bottom of the receiver and of course, no pump would be needed if the discharge were at a point thirty-two feet below the bottom of the receiver. Should the water coming from the filter be at or near the boiling point, some kind of condenser, of course, would have to be installed between the filter and the receiver. In order to know how much water is in the receiver at any time and if the vacuum release mechanism is working correctly, it is advisable to have a long water gauge glass attached to the side of the receiver and also an accurate vacuum gauge.

As stated above, the filtered cake is discharged directly into the uppermost end of the kiln which is similar in all respects to the rotary kilns used extensively in the cement industry. These kilns should preferably be of the two tire type for the reason that they can be kept better in alignment than the three tire type and should have a slope of from  $\frac{3}{8}$ " to  $\frac{1}{2}$ " per foot. The speed of rotation of the kiln varies and cannot very well be predetermined in that it is dependent entirely on the length of the kiln, the water content of the cake being burned and the time required for complete burning.

The rotary kiln is one of the most wasteful pieces of apparatus used in industrial processes as there is a large unavoidable loss due to heat radiation amounting from 18 to 40% of the total heat delivered to the kiln, and therefore, great care must be exercised in selecting the right size of the kiln and its lining. Various methods have been suggested and tried to reduce this large radiation loss, but not very much success has

been obtained. Some plants have tried covering the hot zone (the lower 35 to 40 feet) with an asbestos covering, with the result that the shell of the kiln became so hot as to buckle the plates and cause a wobbling rotation. Others have tried using an asbestos lining between the fire brick lining and the shell and this was found also to be unsatisfactory on account of the fire brick burning up after a short time. Mr. Harold A. Henry (Trans. Amer. Cer. Soc.) found that the best rotary kiln lining is a hand-moulded, high alumina fire brick of a porous nature with a very low percentage of plastic clay and burned to a temperature of at least 2600° F.

According to Mr. Ellis Soper (Jour. A. S. M. E.), the radiation of a rotary kiln can be found from the following equation:

$$W = 125 \times S \times 1.0077 \times T'' - 1.0077 \times T'' - 0.55 \times (BT' - T'')$$

$$76.9$$

where W = B.T.U.'s per square foot per hour.

T' = Average temperature of shell.

T'' = Average temperature of air.

B = Coefficient of conduction = 6.

S = Coefficient of radiation = 2.77.

The burning of the sludge cake is a very important item and it should only remain in the burning zone long enough to have all of the carbon dioxide driven off; overburning will produce lime hard to slack and increase the amount of necessary fresh lime to be added to the reclaimed lime to make up for the loss due to impurities resulting from overburning. According to John Johnson (Trans. Amer. Chem. Soc.) the minimum burning temperature of calcium carbonate (lime sludge) is 1648 deg. Fahr. for a pressure of carbon dioxide of one atmosphere, which is never obtained in practice, and is determined from the following equation—

$$\log p = -9340 + 1.1 \log T - 0.0012 T - 8.882$$

T

where p = The equilibrium pressure expressed in mm. of mercury.

T = The absolute temperature in degrees Centigrade.

It is well known that calcium carbonate may be decomposed into calcium oxide and carbon dioxide and that these substances may recombine to form calcium carbonate. If the carbon dioxide is removed as fast as it is formed so that its partial pressure is kept below that given for the temperature by Johnson's equation, the reaction will continue in the direction to form calcium oxide. The range of burning temperature should not be wider than from 1740 to 1920 deg. Fahr. and for economical production of lime, the best temperature is one which does not exceed 1830 deg. Fahr. At 2000 deg. Fahr. the effects of overburning become evident and at 2900 to 3270 deg. Fahr. calcium oxide would be entirely inert to the action of water. Burning lime in an atmosphere of superheated steam will, according to Herzfeld, lower the decomposition temperature to about 1470 deg. Fahr. The following table shows the behavior of calcium carbonate burned in air and superheated steam.

	Temperature—			
	Degrees Fahr.			
	932	1200	1256	1457
Burned in air, Calcium oxide—%	0	0	0	37
Burned in superheated steam, Calcium oxide—%	0	7	23	100

After the sludge has been subjected to the process of burning the resultant lime is discharged from the lower end of the kiln and conveyed to either a storage bin or directly to slaker tanks where it is used again for the preparation of cooking liquor. The size of the pebbles of lime as they come from the kiln varies from  $\frac{1}{4}$ " to 1" in diameter and in appearance resemble white marbles which needless to say are difficult to handle when conveyed up an incline if the right kind of conveying apparatus is not used. As an example of a satisfactory conveyor, the V bucket type gives good results.

As the lime leaves the kiln at a temperature in the neighborhood of 1200 to 1500 deg. Fahr. considerable heat is carried out with it and goes to waste. Some methods have been tried to reclaim this heat for preheating the air to be supplied to the kiln for combustion purposes, but from all accounts, a satisfactory device has not been worked out and most plants accept this as an unavoidable loss.

Due to impurities in the sludge and a small percentage of unburned calcium carbonate passing out with the reclaimed lime, an amount of fresh lime must be added to the reclaimed lime to make up for these losses which vary in different plants from 10 to 15%. Of course the burning of the same sludge over and over again affects the purity of the lime, consequently there is a point in the cycle of operations at which the sludge resulting from the reclaimed lime must be thrown away and a fresh batch of lime then has to be added to the system to make up the required amount needed for the preparation of the cooking liquor.

The kilns are usually fired by natural gas or producer gas and of course, in localities where there is no natural gas available, producer gas is generally resorted to. If producer gas is used, the gas flues from the producer to the kiln should be short and preferably insulated so as to reduce the loss of sensible heat carried by the hot gas. For good operation, the temperature of the gas as it enters the kiln should be in the neighborhood of 1200 deg. Fahr.

The producers may be of either the hand-feed type or the mechanical feed type, but the latter is preferable as the feed is continuous and a more uniform thickness of the green fuel bed can be maintained. Air for the producers is supplied by means of either a steam jet blower or a steam turbine blower and a pressure regulating valve should be installed between the blower and the main steam line so that a constant steam pressure will be maintained at the blower to facilitate the adjustment of the amount of air supply which has to be varied from time to time according to the richness, the temperature and the pressure of the gas above the producer. The quantity of air blown is an item not to be overlooked and great care should be exercised at all times to see that only sufficient is admitted to the producers to do what it is intended to do as too much free air coming in contact with the gas through "channels" will burn its combustible constituents and raise the temperature and increase the percentage of carbon dioxide and at the same time, decrease the percentage of carbon monoxide, thus producing a poor gas high in nitrogen and with a low heat value.

With a steam-air ratio of .25 lb. to 40 cu. ft. a good rich gas can be obtained with the amount of carbon monoxide between 24 and 28% and not more than 4 to 6% carbon dioxide. Analysis of the producer gas should be made from time to time and the pressure

and temperature of the gas above the producer should be taken at the same time. With this information available, it is an easy matter to determine the best setting of the air blowers to give a good rich gas high in carbon monoxide and low in carbon dioxide.

The admission of air to the kiln for combustion should be so arranged that only the theoretical amount needed for complete combustion is allowed to enter and in order to be able to regulate this air supply, all air leaks and holes through which uncontrolled air is passing should be closed up. Excess air results in a large heat loss to the stack which increases as the radiation loss from the kiln is reduced and is probably also a contributing cause of the burning up of the kiln lining in the hot zone. In order to determine what the percentage of excess air is, it is necessary to have the analysis of the stack gases, the analysis of the sludge entering the kiln from the filters, the ultimate analysis of the fuel used for firing and the fuel burned per ton of lime and if gas producers are used, the great efficiency of the producer and the percent of combustible passing out with the ash. The percentage of carbon dioxide as obtained from the stack analysis of course consists of that resulting from combustion and of that resulting from the dissociation of the calcium carbonate and therefore, in order to determine what the maximum obtainable percentage should be the percentage resulting from each of the above two items must be determined.

The temperature of the gases to the stack varies around 450 deg. Fahr. and depends on the length of the kiln, the moisture content and temperature of the filtered sludge cake as it enters the kiln. When the kiln is operating correctly, the gases issuing from the top of the stack will have a light-yellowish color.

From a thermo-chemical analysis of the performance of a plant under every day operating conditions, the amount of heat used for the dissociation of calcium carbonate should amount to about 13.5% of the total heat delivered to the kiln, 17.5% for evaporating and carrying off the water from the sludge cake and 20% due to radiation from the kiln, which, expressed in terms of fuel consumed represents about 270 lbs. of coal per ton of lime produced. This last item clearly indicates the necessity of giving much consideration to the matter of kiln lining and the selection of the right size of the kiln to handle only the tonnage required. In an unevenly proportioned plant with a kiln and its lining of the incorrect size and material, the radiation loss above may run as high as 50%.

At the present writing, the writer does not have any recent up-to-date figures on the cost of installation or the operating cost of these plants, but expects to be able to give this information at an early date when prices of materials and labor conditions adjust themselves to a more stable basis.

In conclusion, the writer trusts that these notes may prove helpful to those persons interested in this subject and while some of the more important points have not been gone into at length, still he has endeavored to bring out those where trouble is liable to be met with by anyone not familiar with the process of lime sludge recovery.

(See also Pulp and Paper Magazine, Mar. 6, 1919, p. 243.)

The marriage of Miss Agnes Nault, daughter of Mr. John Nault, of Outremont, to Mr. Antoine Dubuc, son of J. E. A. Dubuc, of Chicoutimi Pulp and Power Co., has been announced for September 11.

## Will Build Container Board Mill in England

Mr. A. L. Dawe, who is representing the Canadian Pulp and Paper Industry in England has sent the following item from the Daily Telegraph, regarding the establishment of a new mill for the manufacture of container board in England. A reading of this extract from the annual report of Cropper & Co., gives not only the plans for this development but a conception of paper manufacturing conditions on the other side. After reviewing the year's work and its returns, mention is made of the purchase by Cropper & Co. of the Colthrop Paper Mills. The report then reads:

Having now felt our way, it has been considered advisable to add to the machinery of the mill by purchasing and erecting a cylinder board machine, for the purpose of working triplex boards. This machine will enable the Mill Company to supply the requirements — or perhaps I had better say some of the requirements — of this company for boards of a description which the mill does not at present make, and will also be in a position to supply the needs of the container factory, to which I will allude in greater detail in a few moments. You will remember that, when I asked your consent to the acquisition of the mill, I told you that we proposed later on to erect a container factory on part of the land.

### Colthrop Company's New Issue.

Now, paper-making machinery is an expensive item, and we want a fairly substantial sum to erect and equip this addition to the mill plant, and the Colthrop Company has, therefore, increased its nominal capital from £150,000 to £300,000, and intends to issue £120,000 for the purposes I have indicated. It is proposed to offer this capital, in the first instance, to the shareholders of this company, and for these reasons. First, I told you when you passed the resolution to acquire the mill that any further capital required would be offered first to you as shareholders in Cropper and Company. That is of itself a sufficient reason, but we have since then been asked by more than one shareholder if he might take shares in the mill, and it is evident, therefore, that there is a desire on the part of some of the shareholders to acquire an interest in the new company, as, by so doing, they will be assisting this company and the Container Company, in which we have a large interest, to obtain just the materials we require as and when we require them. You will be to that extent giving material assistance to the business in which you are already interested. The prospectus of the new issue has just been completed and will be sent to you immediately.

### Interest in "Container" Business.

Now we come to the container business, which is the last of my four points. Possibly some of you may not know what a container is beyond the evident fact that it is to contain something. What are technically called "containers" are large folding boxes made of strong material known as fibre boards, and sometimes of corrugated boards, which are used for packing goods and take the place of wooden cases. These container boxes are very largely used in the United States, which is the home of the golding-box industry, and have been used to some extent in this country. The war has, as you know, been responsible for the consumption of phenomenal quantities of wood for all sorts of purposes, with the result that the price has reached

business that under the packing of goods in wooden cases an expensive matter, and is in some businesses almost prohibitive.

As a consequence, the demand for containers, which has been constantly growing, is, I should think, at the present time limited only by the capacity for turning them out. We have, as you may remember, always had our eye on this business. I have alluded to it more than once in my annual remarks, and when we obtained control of the Colthrop Mill we determined at the earliest opportunity to take up that business. We decided, therefore, to send Mr. Frank Smith to the United States to investigate the matter, with a view to making the necessary arrangements for commencing business here. I was asked to accompany him, but as it was not possible for me to leave England at that time, my colleague, Mr. Seowen, stepped manfully into the breach, and these two gentlemen, together with Mr. Forster, the secretary of the Colthrop Mill, spent some weeks visiting the various box-making centres, and gave us a most interesting report when they returned, which I wish that time would permit me to read to you. We are much indebted to these gentlemen for their useful work. I may mention that, during Mr. Smith's stay in America, he was able to purchase a considerable quantity of boards which have been most useful to us, and have materially assisted us to fill our orders.

#### New Company Formed.

As the result of that journey we resolved to embark in the container trade, and it was thought desirable to initiate the business by means of a separate company, mainly in order that this company's risk should be, as in the case of the Mill Company, limited to the amount of its interest in the new company. A company has been formed called Containers Limited, with a capital of £120,000, to which this company will in due course subscribe in the first instance £15,000. The board consists of Mr. Shirley Cropper, Mr. Horace Cropper, and Mr. Seowen, with Mr. Frank Smith as managing director and myself as chairman. The share qualification of the directors amounts between them to £2,500, and about £10,000 comes from another subscriber. We have, however, stipulated that we have the right at any time to provide an amount necessary to enable us to keep control of the company.

This capital cannot, of course, be expected to earn interest for some considerable time, as the building has to be erected and the machinery installed, the business being an entirely new one. The construction work will, however, be pushed on with, and I hope before we meet again we shall be able to report that active business has commenced. Containers, Ltd., has leased a portion of the land from the mill, and the buildings will adjoin the new addition to the mill machinery, so that the container machines will be fed direct from the paper-making machine, an ideal arrangement for economical working. The railway sidings serving the paper mill will be extended into the container works, thus giving excellent transport facilities. Now, I hope I have shown you that when the new Colthrop Mill is equipped with the additional machinery, and the Container Company is fairly launched on what we hope will prove a successful career, this company will, in our judgment, be in such a strong position that we shall be able to handle successfully any business that may be available.

#### Busy Times Ahead.

Since the armistice, business has been extremely difficult. Orders have been withheld in the hope of

a further reduction in prices. The market for raw materials has also been disorganized since the removal of the restrictions on the import of paper. Business, however, now shows signs of settling down. That the business is to be done there is, I think, little doubt. The orders in hand indicate that we may look for busy times ahead, and may, I think, anticipate a continuance of remunerative trading. You must not, however, run away with the idea that all is plain sailing. I said at the commencement of my remarks that the country was now in a position to turn its thoughts from the destruction of human life to a policy of constructive business. But at the present time the people are overwrought by the strain of the strenuous times through which we have passed, and some of the leaders among the workers are embracing a policy, which, if followed to its logical conclusion, could only end in disaster.

#### F. P. L. BROKE BIG BEAM.

"Timber Testing at the Forest Products Laboratories of Canada, McGill University," is the title of a film that will appear shortly at the local leading screens. It will also be shown throughout Canada as being of considerable educational interest.

The cinematographer of the British Canadian Pathe news recently photographed the first movie taken showing work in progress as conducted at the Forest Products Laboratories of Canada, located at 700 University street. A private view of the film was given last Saturday, and the excellent picture gives an instance of one of the many and varied kinds of important work that is carried on at these Government research laboratories, conducted by the Forestry Branch, Department of the Interior.

The film shows a test to determine how much weight was required to break a structural timber measuring 8 inches by 16 inches, by 16 feet long. The test piece was purchased from a local timber firm and was of Douglas fir as used for structural purposes, showing structural wood. The British Columbia Forest Service desired to have exhibited at their section of Forest Exhibits of the National Exhibition, which opens at Toronto on the 23rd instant, a full-sized beam of Douglas Fir as used for structural purposes, showing how it breaks and what weight it will carry. The Forest Products Laboratories of Canada, which has frequently made strength tests of various kinds of Canadian woods, was instructed to carry out the necessary tests. This timber was the largest of its kind ever tested here. The timber was placed in the testing machine in the position it would rest when in actual construction conditions. Pressure was applied by hydraulic plungers at each end. The centre of the timber rested at two points on the weighing mechanism of the machine which records the weight applied. The break occurred at 58,450 pounds.

#### DIRECT STEAMERS FROM CANADA TO CHILE.

The Pacific Steam Navigation Company is making inquiries as to business offering from Eastern Canada to Chile.

A number of their boats are now in the service of the British Government, and when released their idea is to have monthly sailings from Halifax provided sufficient business is in sight.

At the present time this line operates a regular service from New York to Chile.—G. P. R.

Carelessness is a corn caused by the shoe of thoughtlessness.

## A NEWSPAPER OF THE CHINA CLAY TRADE.

The China Clay Trade Review, Vol. 1, No. 1, is just received and from the sample it is easy to see that there is a wide and fertile field for just such a paper. It will find interested readers in a great variety of industries, for no less than 44 uses for China clay are mentioned in an article in this issue, and the list is by no means complete. China clay is doubtless the most important mineral constituent of paper and the new journal naturally gives considerable attention to this industry. We quote the following sample. If this arouses any interest, the Review can be had for a year for 7s. 6d. Address 9 and 10 Southampton Building, Holborn, London, W.C.

### China Clay in Paper.

#### Why it is Preferred Above Other Materials.

Now that the production of paper has reached such an important position in this country owing to the scarcity of paper-making materials, manufacturers might very well pay more attention to the use of China clay, which is a valuable adjunct to the paper industry. The clay, "paper clay," as it is called, when employed in this manufacture, is added in suspension in water to the prepared pulp during the first process of beating or breaking up and mixing with water. The object of adding the paper clay is to fill up the interstices between the fibres of the pulp, so that a more smooth and solid surface may be imparted. This also increases the weight of the paper. The kind of surface thus produced is particularly in request by printers of half-tone photo-mechanical blocks. It is impossible to print from such blocks on a paper that presents a fibrous surface.

#### Its Affinity for Printers' Ink.

China clay or paper clay, talc, barium sulphate, and calcium sulphate, which are used for the same purpose, are known in the trade as "fillers," or loading substances. Many paper makers still cling to these other "fillers," but if they only knew it, none of those fillers remain so well in suspension in the pulp, nor do they have the same affinity for printers' ink and aniline dyes, one of the most important properties of clay in this connection.

Only the purest and whitest kaolins are suitable for the fine grades of paper; less pure varieties are employed for the coarser grades, wall papers, and some browns. Even for colored papers white clay is preferred, as more constant results are obtained by adding the requisite pigments to a pulp with white clay. Some fine printing papers are prepared by treating the web with a coating made of an emulsion containing China clay.

#### Cannot Paper Carry More Clay?

In addition to its use as a "filler" in paper making, it is also used as a coater and glazer, the best clay giving that fine surface to highly-finished papers. Newspaper pulp normally carries from 15 to 25 per cent of China clay. (Not west of the Atlantic.—Ed.) With the present shortage of other paper-making materials and the apparent scarcity of those materials for "news," it might very well carry more, seeing that the use of clay is not affected by tonnage difficulties. Paper makers might very well give greater attention to the extended use of this raw material in these times.

At present there is no production of wood-pulp or paper within Siberia; the paper market of Western Siberia is supplied chiefly from European Russia and Finland, while Japan has recently developed an export of paper to Eastern Siberia. Three or four years

ago an attempt was made to start a small paper and pulp mill at Tomsk, but the project was abandoned, presumably for lack of capital or because of the difficulty of purchasing equipment from abroad. There appears to be an attractive opportunity for the development of a pulp and paper industry in Western or Central Siberia for the supply of the domestic market, and some progress in that direction will no doubt be made within a few years. There are also possibilities for the wood-pulp and paper industry in the maritime district of the Russia Far East, but in view of the increasing production of Japanese pulp and paper in Northern Japan and Corea present commercial prospects of such undertakings in Eastern Siberia are now uncertain.

## STIFF FINES TO CORRECT FOREST FIRE PLAGUE.

Prosecutions of settlers for causing forest fires by burning their land-clearing debris without official permits are proceeding in Ontario, Quebec and New Brunswick. Convicts with heavy fines have already been secured in numbers of cases. Of twenty settlers brought before the New Brunswick courts in July, fourteen were convicted and given stiff penalties. In addition the magistrates rated them severely for indifference to human safety and the security of neighbors' property. Quebec has sent several settlers to jail because of carelessness in burning off their lands.

Manitoba had by far the lowest forest fire losses of the prairie provinces this year largely because of a vigorous enforcement of the system of supervising settlers' fires. Exactly the same law is in force in Saskatchewan, but was left a dead letter by the Provincial authorities, with the result that Saskatchewan lost an incredibly large share of its timber properties. Alberta has not yet taken provincial action in eradicating the forest fire evil, although to it belong the primary responsibility. Alberta's losses in timber have been enormous and the evil effects upon the provincial water supply, for power and irrigation, are among the serious consequences.

## WALL PAPER PUT TO NEW USE.

Wall paper travellers are now out taking orders for the coming season. All manufacturers of hanging papers report that the outlook is exceptionally bright owing to the fact that so many new dwellings are going up. Then many householders, who postponed decorating their rooms and apartments during the war, on the ground of economy, are now beautifying the interiors of their homes.

A new use for wall paper has been found in Toronto as was evidenced in the arrest of Max Ackerman, 375 Queen street east, who, it is claimed, carried on an illicit sale of booze under the pretence of conducting a wall paper establishment. All that was necessary for the caller to produce was an order bearing the magic words, "Please give the bearer one dozen rolls of wall paper." This, it is reported, was the open sesame to the cellar. The term "one dozen rolls of wall paper" was tantamount to saying a quart bottle of whiskey. Ackerman said that he could afford to pay a fine as he has made nine thousand dollars since he commenced "the wall paper business." Although he may not know a great deal about the manufacture of pulp and paper, he had part of the equipment in the shape of "a wet room."

## British Trade News

(From Our London Correspondent)

London, 11th August 1919.

Regarding industrial unrest, the outlook is not at all satisfactory. The threatened eruption in the paper mill industry checked by the employers, who met the workers in a very generous manner, both as regards hours and wages, but they no sooner had grievances settled than the miners kicked up rough and walked out of the mines. Now it is only a matter of time—and the using of a little discretion—to settle a dispute between employer and employees, but when the miners strike, mill owners are up against something which they cannot forget in a hurry. Fortunately for the British paper mills the coal strike did not develop into a serious crisis this time. Matters looked ugly at one period and transport on the railroads was threatened with dislocation. With the exception of a few thousand miners out in the North of England at present, the crisis is nearly over and paper mill owners are able to breathe freely again, having had a narrow escape from a most depressing industrial turmoil. There is still considerable amount of unrest in the country, as I write, but up to the present it has affected pulp and paper very little.

### A New Container Board Mill.

The 22nd annual meeting of Copper & Co., Ltd., was held in London on the 2nd instant. A dividend is declared at the rate of 15 per cent. per annum, together with a bonus of 10 per cent. Stephen H. M. Killick, J. P., the President, made a long speech and mentioned that they had acquired the Colthrop Paper Mill and formed a separate company, to be known as the Colthrop Company, the nominal capital to be increased from £150,000 to £300,000. It has been decided to add to the machinery of the mill by purchasing and erecting a cylinder board machine for the purpose of working triplex boards, as reported more fully elsewhere in this issue.

The use of containers, or folding boxes, has not very much developed in the United Kingdom, so that Messrs. Cooper & Co., Ltd., are practically starting a new industry, or developing a small industry.

The President said in his speech: "Since the Armistice business has been extremely difficult. Orders have been withheld in the hope of a further reduction in prices. The market for raw materials has also been disorganized since the removal of the restrictions on the import of paper. Business, however, now shows signs of settling down. That the business is to be done there is, I think, little doubt. The orders in hand indicate that we may look for busy times ahead, but you must not run away with the idea that all is plain sailing."

### Must Use British Paper If Possible.

The Paper Import Restrictions Department state that before granting a license for the import from without the British Empire of any class of paper beyond the proportionate license to which purchasers of British paper are entitled under the regulations they require to consider the full circumstances of each case, including the possibility of a British paper serving as a substitute for a particular grade not obtainable within the Empire. Free licenses are not automatically granted, even for such classes of paper as end-weights, proof-boards, and import-

ers are advised to ascertain whether the goods will be allowed into the country before placing an order for foreign paper. The Paper Import Restrictions Department, therefore, give notice that in view of the difficulty of obtaining sufficient supplies of certain cardboards within the British Empire, they are prepared until further notice to grant import licenses to the extent of 250 per cent. for British purchases for cardboard of the minimum size of 25 in. by 30 in., 4 ounces per sheet. This will not apply to pulp board, or pasteboard, etc. All inquiries must be accompanied by full details of the order and the reasons why British paper cannot be used instead. These particulars should be of interest to Canadians.

### Canada's Great Chance.

In some of my previous notes I have hinted at some of the difficulties the Norwegian Pulp Mills are laboring under. Things are not going well at all in Norway and reports have reached London that a good many of the mills are now closed down. A great many of the British mills are depending on Norway for pulp, but it is fully expected present contracts will not be affected in any way. As regards the paper mills the latest restrictions of the Trade Board may help them a little in the British market. The mills are in a bad way I hear, and the cost of production is swallowing up the best of the profits. As we stand at present, we have Germany out of the market and Norway in straightened circumstances. Canada should therefore, cast a lynx eye on what these countries are unable to supply and I would suggest a study of the pulp and the various qualities of paper that are used by the British consumer. Canada has a golden opportunity here and the Norwegians are fearing the Dominion's competition in the future. The pulp markets in Norway and Sweden are quiet and beyond the catering for contracts in existence, there is a paucity of new business. They are also hampered in shipping facilities.

The pulp market in the United Kingdom is in good demand for sulphite and moist pulp, and there is a tendency for prices to harden, particularly for easy bleaching sulphite which is quoted on a higher level. Shipments, in the circumstances, are only fair, parcels arriving from Denmark, the States, Canada, etc. and from Sweden which to-day, as heretofore, still holds the rein in the market. Sweden, however, is now threatened with labor troubles which may affect the output. Other raw materials show no change, except size and china clay. Size is advanced in prices, and china clay has also made a material jump of 7s. 6d. a ton. The rag and waste paper market is depressed.

All chemicals are dearer owing to the coal strike and the increase of 6s. per ton for coal.

Paper mills in England and Scotland have advanced the prices of certain grades of papers, owing to the extra cost of production.

The Scotian has arrived with 196 tons of unbleached sulphite from Montreal.

The Empire Paper Mills, Ltd., is the name of the new company that has been formed with Viscount Rothermere on the Board. The Viscount is a brother to Lord Northcliffe and the capital is £300,000. Offices are 30 Ludgate Hill, London, E.C.

Newspaper headline:—"Canadian Gas Association Convenes in Ottawa." Must mean laughing gas if it refers to a well known regular gathering.





## Technical Section



### NEW MEMBERS.

Two new junior members have been admitted to the Technical Section. They are: Paul G. Woodward, Esq., Laurentide Co., Ltd., Grand'Mere, Que. Norman F. McCaghey, Esq., Price Bros. & Co., Ltd., Kenogami, Que.

The following student members of the Technical Section have been elected. There has been a very encouraging growth in the membership of the Section this summer and a lively interest is expected to be shown in the annual meeting. The new student members are:

R. E. Midgley, E. J. Murphy, and J. O. Challenger, all of Montreal.

### REVIEW OF RECENT LITERATURE.

**A-14. Tearing resistance of paper.** Sidney D. Wells, Paper 23, No. 23, 750-3 (1919.) An investigation of the tearing strength of different samples of paper was made in which the instrument used consisted of the Schopper tensile tester slightly modified for the purpose. The results obtained indicate that the tearing test furnishes valuable data from which to judge the strength of a paper. While the Schopper tensile tester may be used satisfactorily, a smaller, cheaper and better instrument for the purpose should be devised.—R. B. Roe in C.A.

**K-6, L-5. Hydrated fibre for papermaking.** Pulp & Paper Magazine, 17, No. 28, p. 553 (1919.) From "Papermaking" is taken a description of a process for chemically hydrating cellulose by treating it with twice its weight of caustic soda and fifteen per cent of its weight of carbon bisulphide in a closed container for six to ten hours. The resulting swelled fibres are washed with brine.—R.C.

**K-6. De-inking paper.** Paper Mill, 42, No. 28, p. 22, (1919.) A process patented by Wm. Osborne (U. S. 1,298,779) consists of treating old papers with a solution of sulphurous acid to which is added soda ash. The digester is then closed and the stock cooked.—R. C.

**K-8. Basic acid and substantive dyes.** W. H. Watkins. Paper, 24, (1919), No. 15, page 40-44. Notes on paper colors from the manufacturers' standpoint — E.K.M.

**M-4. Tentative specification for rubber belting for power transmission,** D53-18T Anon. Proc. Am. Soc. Testing Materials 18, Pt. 1, 676-80 (1918).—These specifications cover two classes of rubber belting for transmission, viz., (1) rubber-covered; (2) friction-covered, and include (1) manufacture; (2) phys. properties and tests; (3) sizes; (4) marking, and (5) inspection and rejection.—(Chem. Abs.)

**R-0. The German paper mills after the war. (La direction des fabriques allemandes de papier pendant la guerre et le retour aux conditions normales).** A. D. J. Kuhn, Wochenblatt für Papierfabrikation, Oct. 31, 1918, through Le Papier, 22, p. 151, 1919.—Advice to German manufacturers as to the measures they should take in order to meet successfully the conditions brought about in their mills by the war.—A. P.-C.

**M-8. Points in pump selection.** B. N. Everett, Chem. Met. Eng. 20, 246 (1919.) An outline is given of the points affecting the choice of a pump as follows: Liquid to be pumped—Specific gravity, temperature, viscosity, size and nature of suspended matter. Total head—pipe size, actual lift, pipe friction (to be considered on both suction and discharge lines.) Capacity—Maximum demand, average demand, storage capacity, breakdown service, hours service per year, advisable speed. Power—type available, reliability, amount required, control, cost per 1,000 gallons, cost per year, cost compared to investment. Total cost—pump, driver, installation, labor, fixed charges, use of exhaust steam, efficiency, fuel consumption. Several instances are given illustrating the significance of these points.—(Chem. Abs.)

**Q-2. Decay in wooden mill roofs.** R. J. Blair, Pulp and Paper Magazine, 17, No. 27, p 521, (1919.) Descriptions and illustrations of destructive fungi are given. It is concluded that double roofs containing an air space are no more immune from decay than are single roofs. A type recommended consists of a double layer of plank separated by three layers of mopped tarred paper. The outside layer may be inferior timber, but should be treated to prevent decay. The inner layer should be high grade wood. The roof should be kept warm in cold weather.—R. C.

**R-2. Paper research literature.** Etta L. Matthews, Paper, 24, 259-64, (1919.) A list of contributions by members of the U. S. Forest Service, Forest Products Laboratory, 1910-1918, with an appendix of contributions by other members of the service, 1877-1918.—(Chem. Abs.)

### HYDRAULIC MACHINERY DID IT.

To the interesting note in last week's Pulp and Paper Magazine on "Piling Water," the editor added a remark about figuring out the work and dollars saved by pressing the pulp more nearly dry. In the Pulp Press we find the following note added to the same article:

The above represents 72,007,200 pounds handled at 33.1-3 per cent air dry. If same had been hydraulically pressed to 60 per cent air dry the result would be 40,000,000 pounds.

If same was afterwards baled, it would only require 600,000 cubic ft. storage space, thereby saving 1,000,000 cubic ft. of space.

There is still another step in the calculation to make it interesting to the mill manager, and that is, the number of men, or proportion of labor and expense, and number of dollars that would have been saved by pressing the pulp.

The same issue of the Pulp Press relates that one result of the recent trip of B. C. Root to Vancouver is the establishment of a new office in that city of the Hydraulic Machinery Co. The MacAndrew Jamieson Engineering Co., 103 London Bldg., were elected to look after British Columbia and Alberta. Both of these gentlemen are graduate engineers. They are doubtless ready to pump anything and press anything on the coast.

# UNITED STATES NOTES

A special report of the American Writing Paper Company recently issued tells of a discovery made by its statistical department showing that the writing paper industry may be taken as a reliable index of general business conditions of the country. A chart prepared by this department of the big writing paper company covering business fluctuations for a period of seventeen years shows that writing paper is as reliable a business barometer as anything else. The line marking on this chart the fluctuations from normal in the production of paper in the United States during this period is closely followed by that representing pig iron production, which has long been considered in banking and financial circles as a sound business barometer. Both are shown to have responded to the panic of 1907, and they both responded to the cessation of the war in 1918. "The chart shows," says the American Writing Paper Company report, "that every time production has fallen below normal there has been a fairly quick reaction, and the more excessive the depression below normal the greater is the reaction that may reasonably be expected. All indexes point to a boom in the fine paper industry, and we are of the opinion that the signs are 'ringing true.' In fact, this movement is already under way."

The boom in the fine paper industry that is now under way is thought to be largely responsible for the present advance in American Writing Preferred. There is usually a slump in the paper business in mid-summer, but this precedent is being violated now, according to an official of the American Writing Paper Company, who says that production is at the highest point obtained so far this year, and is increasing at a rapid rate. Orders are said to be above normal.

The proposed reorganization of the Du Pont interests, through the formation of the Du Pont Securities Company, will not be made at this time because the Internal Revenue Department has not been able to define clearly its attitude on the question of whether there would be taxable income resulting from the exchange of stock under the proposed plan. Announcement that the plan is inoperative, for the time being at least, has been sent to all stockholders.

The damage done to Maine timberlands this year by forest fires has been comparatively little. The region from Millinocket northward to Ashland is the section where most of the blazes occurred, and 97 per cent of the fires there were due, according to the States Forest Commissioner, to the carelessness of the local fishermen. The telephone connections of the Maine forestry district now include about 900 miles, some 150 miles of new telephone wires having been added this year. About \$100,000 worth of equipment is used in the forestry department for fighting fires.

The Diem & Wing Paper Company, of Dayton and Cincinnati, Ohio, has just been given authorization from the secretary of state to increase its capital from \$200,000 to \$900,000. A number of improvements are being planned for the Dayton plant and the business of the company will be greatly extended.

The Tonowanda Board and Paper Company has been acquired by the Beaver Board Company of Buf-

falo, according to an announcement made recently by William F. MacGlashen, president of the Beaver Board Company. Mr. MacGlashen said the purchase represented an investment of \$2,000,000, including proposed waterfront improvements, which will give his company excellent shipping facilities in connection with its other two frontier plants in Buffalo. The Tonowanda plant is located at the junction of the Niagara River and the Tonawanda Creek, and is considered one of the best mills of its kind in the country. The new mill will be overhauled and used for experimental purposes in addition to the manufacture of fibre products.

The Forest Products Laboratory operated by the Forest Service of the Department of Agriculture at Madison, Wis., is making special efforts to render available for industrial reconstruction purposes all the new information it has obtained as a result of its experiments and war activities. During the war the laboratory was given over almost exclusively to research work on problems involving the use of wood with special application to war requirements. Most of the information thus obtained has some application to the peace time use of wood by the various industries. With a view to establishing a more intelligent and economical use of wood the laboratory now is trying to bring about contact and co-operation with these industries.

## How the Hornet Does It.

The paper making methods employed by the hornet in the building of his elaborately planned nest are interestingly described in a consular trade report from France, which reprints in part an article on the subject that appeared in a recent issue of a French scientific weekly. The process by which the hornet makes the paper was given much study by Charles Janet, an investigator of insect life, who found that its paper-making methods will compare favorably with those of our paper mills. The hornet, he says, seeks some rotting trees, removes a piece of wood, and chews it until he produces a ball of pulp about a quarter of an inch in diameter. Then clinging to a twig with his middle and hind feet, the worker juggles the ball of pulp with his forefeet, chewing it continuously to make it more plastic and adhesive. After sufficient chewing, he disposes of the ball. Some of it is generally used in repairing or in building additions. Selecting a suitable part of the nest he attaches the ball and then drags it, leaving behind a narrow strip of paper. As the ball is unreeled, it is shaped by the insect's jaws, and by incessant tamping along the joint, it is glued to the sheet of which it is to form a part. When the ribbon has reached a length that varies from half an inch to an inch and a half, the hornet returns nearly, but not quite, to the point of beginning, and deposits a second strip; soon after that a third, and so on to completion. Although the paper of which the envelopes and their interior cells are fashioned are in themselves perilously weak, the nest can sustain an astonishing weight of larvae and hornets, which speaks well for the skill of the builder.

A clean, attractive town draws business.

# PULP AND PAPER NEWS

A provincial charter has been granted to the Ross Can Co., Limited, with a capital stock of \$500,000 and headquarters in Bowmanville. The company is empowered to manufacture and deal in cans and containers of all kinds, made from metal, fibre and other materials.

The plant of the Toronto Paper Mfg. Co. at Cornwall was shut down for a few days recently owing to a break in the locks at the Cornwall canal. The snapping of the bow-line of the steamer Aztec, of Buffalo, when east bound, in Lock 17, tore out two sets of gates in the lock and a great quantity of water swept down the canal. Much land was flooded and a large staff of men was immediately set to work to expedite repairs.

Paul Buss, formerly of the staff of the Port Arthur Pulp and Paper Co., Port Arthur, Ont., who recently returned from overseas, was in Toronto during the past week. Mr. Buss, who is a son of Charles F. Buss, superintendent of the Mille Roches plant of the Provincial Paper Mills Co., went across with the American Engineers Corps and spent some time in construction work on a large dock at Brest, France.

John Martin, of the John Martin Paper Co., Winnipeg, vice-president of the Canadian Paper Trade Association, who was absent for many months from his desk owing to a long illness, is now back again and has resumed regular work. Mr. Martin is greatly improved in health.

Fibre Board Penetanguishene, Ont., is installing several new beaters and other equipment which, when completed, will treble the present output of the plant. The industry is now turning out about 250 boards or 8,000 square feet per day. Manley Chew, of Midland, the widely known lumberman, is the proprietor of Fibre Board.

Notice has been sent out by the mills that Waterloo, Ont., has been added to the list of delivery points on kraft paper.

In connection with the proposed new paper mill, which will likely be erected at Brockville, Ont., for the manufacture of bond, lithograph and catalogue paper, one of the principal promoters is Charles F. Buss, of Mille Roches, where he is superintendent of the plant of the Provincial Paper Mills Co., Limited. Mr. Buss has been with the Provincial Paper Mills for the past ten years and came from Kalamazoo, Mich., at the time the plant was taken over. J. R. Buchanan, of Ottawa, who is associated with him in the proposition, is connected with the Capitol Wire Cloth Co., of Ottawa.

Andrew Clarke, who for the past few years has been a member of the editorial staff of the Advertiser, London, Ont., has been appointed editor of the Retail Merchants' Edition of the Toronto Globe.

R. H. Bryan, representing the Brompton Pulp and Paper Co., East Angus, Que., was in Toronto during the past week calling upon the trade.

T. E. Gain, vice-president of the Rateliff Paper Co.,

Toronto, is spending his holidays at Big Bay Point, Lake Simcoe, with his wife and family.

J. G. Worts, manager of the Don Valley Paper Co., Toronto, accompanied by his wife and family, is spending his vacation at the Wawa, Lake of Bays, Ont.

J. Hewitt, Jr., president of Paper Sales, Limited, Toronto, is at Burlleigh Falls, Ont., for a couple of weeks fishing.

John M. Imrie, of Toronto, manager of the Canadian Press Association, Limited, left this week for Newcastle, N.B., where he will attend the annual meeting of the Maritime Division of the C. P. A.

E. Pullan, of Toronto, and wife, are on an automobile trip to Boston, New York and Atlantic City.

E. S. Crabtree, formerly of Toronto, who is well known to the trade through his former connection with the Crabtree Mills, has been appointed manager of the Camden Paper Mills Co., at Camden East, Ont. It is understood that the plant, which has been closed down for some time, will resume operations early next month and will turn out kraft paper.

P. L. Colbert, manager of the National Paper Co., Valleyfield, Que., spent a few days in Toronto during the past week and called upon a number of friends. He reports that the company is rushed with orders and that the prospects for an active fall business in the coated paper line are bright.

The 36th annual assembly of the Sovereign Great Priory of Canada, Knights Templar, will be held in St. John, N.B., on Sept. 16, 17 and 18. W. P. Rynie, Past Grand Master, O. P. McGregor, Past Grand Registrar and C. F. Mansell, Grand Treasurer, all of Toronto, will likely attend. These gentlemen are all known in pulp and paper circles. The triennial Grand Encampment, Knights Templar, also meets in Philadelphia from Sept. 7 to 16.

George E. Challes, of Toronto, sales manager of the Riordon Pulp and Paper Co., and wife, are spending a holiday at Craigie Lea, Muskoka Lakes.

The Interlake Tissue Mills, W. J. Gage & Co., and other paper firms, will make their usual attractive exhibits of paper at the Canadian National Exposition, Toronto, which will be formally opened on Monday next, August 25, by the Prince of Wales.

R. H. Constable, of Woodstock, Ont., who conducts a job printing establishment in that city, is the oldest working printer in America. He is now aged eighty-seven and is to be found at his establishment every day.

The Toronto Carlton Club, which holds meetings and luncheons occasionally outside of the city, will meet in London on Tuesday, September 11th. It is expected that representative paper box manufacturers will be present from many towns and cities in western Ontario.

On the Cunard Line wharf in Montreal, this week, there was seen a shipment of 47 huge paper machine dryers consigned to A. P. C. Putting two and two together this looks very much like a shipment of part

of the material for the Abitibi Power & Paper Company, who have been looking for a shipment of parts for their new Walmsley machines.

In answer to a number of inquiries it seems worth while to repeat that the Canadian Vegetable Parchment Co., Ltd., which will soon begin work at their new mill at Merriton, Ont., is an outgrowth of the Garden City Paper Mills.

Mr. and Mrs. Colin Gamble, of Port Arthur, are the guests of Mr. and Mrs. Edward Beek, secretary pro-tem of the Canadian Pulp and Paper Association, Victoria avenue, Westmount.

Forest fires have been all the rage in Ontario recently. Besides the western fires whose smoke stopped navigation on Lake Superior, last week brought reports of fires in the Parry Sound region and around North Bay. The former wiped out Deer Lake Settlement, destroyed the C. N. R. bridge and chased the settlers from one clearing to another. The latter looked serious late last week, but the situation seems to have improved later.

B. K. Sandwell, who for some years has been editor of the "Financial Times," has joined the "Journal of Commerce," published at the Garden City Press, Ste. Anne de Bellevue, the home also of the "Pulp and Paper Magazine." The fact that Mr. Sandwell has been a staunch supporter of the rights of the paper-makers in the recent unpleasantness had nothing to do with the change, but it does add to his already cordial welcome as a neighbor.

It is said that the New York "Sun" recently printed a long interview with J. A. Bothwell, president of the Canadian Pulp and Paper Association, to the effect that the scare started by some one in New York about a shortage of newsprint is not very well founded. It is true that some new production will soon be on the market, and the demand in the United States and abroad is increasing.

#### PROGRESS AT CLARKE BROTHERS NEW MILL.

Mr. Stark, one of the directors of Clarke Bros., who are erecting a new sulphate pulp mill at Bear River, N.S., was in Toronto a few days ago and reports good progress on the plant. John B. Roberts of New York City, who is well known in connection with the Elevated and Subway Railway Station Store construction is the engineer and is now on the job. The entire foundation of the pulp mill is complete and the erection of the building was begun this week. A complete mill equipment and pulp manufacturing and other machinery has been bought in the United States and is now on the way to the mill in Clarke Brothers' own vessels. The machine shop is complete and running, and the new saw-mill is under way.

#### SPANISH RIVER'S CONSTRUCTION RECORD.

The new newsprint mill of the Spanish River Pulp and Paper Mills, Limited, is establishing new records as far as construction and installation are concerned. The entire building — the construction work on which was started on June 1 — is now completed. The work of installing the machinery is now being rushed, one set of machines will be in operation by November 1, and from this portion of the mill an output of 50 tons a day will be obtained.

The second set of machines will be installed and in operation sixty days after that date, or by February 1st, 1920, which will give the new mill a daily output of 100 tons. This will easily break all records in the

way of achievement in connection with paper mills in Canada.

It will also enable the company to get the benefit of the favorable markets that are sure to prevail during the next few weeks in the United States.

#### C. F. M. SEND WHYTE TO EUROPE.

Mr. Wm. Whyte, manager of the pulp and paper machinery department of the Canadian Fairbanks-Morse Co., left last week for an extended trip to Europe. He will visit the larger mills in Great Britain and Scandinavia. Mr. Whyte was manager of the Abitibi Power & Paper Co. while the mill was under construction and has had a wide experience elsewhere in pulp and paper manufacture, which has been extended through his connection with the Fairbanks-Morse people. He has been brought into contact with



William Whyte.

practically every phase of pulp and paper manufacture and, being a keen observer, will doubtless have some interesting first hand opinions of conditions on the other side. It is an encouraging sign for the success of Canadian equipment concerns that the Fairbanks-Morse Co., has considered prospects sufficiently satisfactory to send an emissary across the sea.

#### INTERNATIONAL BEGINS WORK ON NEW MILL.

Quebec, Aug. 18.—The first shovelful of earth was removed to-day from the future site of the mammoth plant of the International Paper Co., at Three Rivers. It will cost in the neighborhood of four million dollars. The International Paper Company has merged into its new venture the St. Maurice Lumber Co., already carrying on operations at Three Rivers.

The excavation work started to-day will be rushed, and it is expected the structure of the mills proper will be up by December next.

The plant will employ about three thousand, and will turn out pulp and finished paper of all grades.

P.S.—This seems a bit optimistic. The statement was made to the editor that work this year would not go beyond the erection of a sulphite mill, to cost about \$500,000.



### CANADIAN MARKETS.

Toronto, August 18.—The paper stock market is good all around and stocks on hand are not large. Buying is going on freely and prices have advanced considerably in most lines. In rags, there is a good business being done and roofing stock and every grade of cottons are in excellent demand. The market appears to have stopped going up, but prices on all items are well maintained. An advertising campaign has been started by one of the largest dealers in the country telling of service to industrial concerns in reclaiming waste paper, rags and clippings. The result is that a larger number of firms than ever, who have waste paper and cloth clippings are marketing them to profitable advantage and at prices which are practically standardized.

The price on dry pack waterproof papers and case linings has recently been increased. The usual trade discount of twenty-five per cent off list quotations is continued. The prices for slitting, rewinding and sheetings are not subject to this discount, so the dealers have been informed.

The market for kraft is particularly strong and it would not surprise the trade if an advance went into effect in the near future. All the companies are sold well in advance and sulphate pulp is bringing \$87.50 per ton at the mill with an active requisition. A fair export trade is being done which is limited only by the inadequate transportation facilities. In manila and fibres there is a very good trade and jobbers report a steady call. As the summer months pass away business is assuming a more solid, substantial tone in all lines of paper and there is no talk of a reduction in figures. The American prices on glassine paper have been withdrawn. Toilet and tissue mills are away behind in their orders and have all the business they can look after for some weeks. Coated paper mills are also turning out their lines to capacity. Many firms are now issuing advertising matter for an aggressive fall advertising campaign, and much coated stock is being used. In fact, all mills report, now that the war is over and the need for economy not so urgently exercised,

there is a disposition on the part of all business concerns and consumers to have nothing but the best. They believe that it pays in the long run and carries a distinct impression of the superior quality and character of the goods mentioned in the announcement. The day of using cheap papers is over.

One leading American firm, which manufactures special lines, has notified its Canadian customers that market conditions now prevailing would justify the withdrawal of all prices and only naming a figure at time of shipment. They fully realize the unsatisfactory position in which this method places merchant and consumer and their aim is to make firm prices good for each month. While for each month prices will be kept firm they will be for only actual current needs and the company reserve the right to decline any orders which seem to them to be unreasonable or in excess of former business or the ability of the manufacturer to make. Orders for future delivery cannot be entertained at fixed prices and customers are asked to "play fair" for normal business only.

The demand for ground wood pulp is good and prices are well maintained. Stocks are gradually becoming smaller. The heavy demand for newsprint is largely responsible for the active conditions in mechanical pulp. The same state of affairs applies to the sulphite pulp situation. Manufacturers are now making contracts with Canadian customers only from month to month and all the whole quotations are stiffening particularly on bleached sulphite. The makers are looking for a large export business this fall and every effort will be put forth to supply the demand. One large pulp and paper company reports that it has a big stock of pulpwood on hand and instead of operating camps themselves, will contract for the greater portion of the wood this season that they require. It does not look to them as if there will be any appreciable reduction in operating costs or wages. The costs, however, will be largely dependent upon the prices for provisions and camp supplies. If the present high cost of living campaign results in any reduction in the prices of the former, companies will feel the effects thereof, but in spite of all the talk on reduced living conditions and

## Scandinavian American Trading Co.

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We buy all kinds  
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# WOOD PULP

At Top Prices.  
Write us and be  
convinced.

nothing substantial has as yet material-

As stated last week, there has been an advance of ten per cent in straw board, chip board, vat lined chip board, ribbed wood board and jute board, No. 3. Other lines are expected to advance in the near future. Paper box factories are all busy and the use of containers for every kind of goods is growing all the while. Mills making special lines of papers in which large quantities of bleached pulp are used, are not issuing any price lists at present and will await such time as market conditions and values become more stabilized. As the season advances there is a feeling that prices are bound to ascend owing to the increase in cartage rates and the fact that the U. S. Railroad Administration has in contemplation another advance in freight rates due to the heavy increases in operating expenses. Whatever is done across the line in the matter of a freight tariff is of vital interest to Canadian companies as when a move is instituted over the border, a similar shift will assuredly follow by the Dominion Railway Board. Large Canadian concerns are being urged to make all possible shipments at the present time, especially in the matter of getting in raw material as very soon many cars will be required for the transportation of grain. Lumber and paper and pulp manufacture are asked to take full advantage of the carrying capacity of cars as heavy loading and the prompt release of equipment are factors in increasing the car supply, lessening congestion, particularly at terminal points and improving the service. The co-operation of all is invited to this end.

It will be remembered that a year ago an increase of twenty-five per cent advance with a maximum advance of 5 cents in the commodity rates on lumber and forest products went into effect. The question is now being asked, should a further advance apply to all commodities including lumber and forest products or do the latter, at present, contribute more than their share to the transportation revenues of the railways? Another questionnaire being put out is to determine if the rates should be advanced at all and what form should the advance take—that is, should it be on a percentage basis or a flat increase.

The campaign which is being carried on by the Made-in-Canada organization and also by the Canadian Pulp and Paper Association through large advertisements in the newspapers, posters, stickers, etc., is having a good effect so far as paper is concerned. Canadian printers and consumers of paper are sticking more to home consumption and thus assisting in reconstruction. In the line of book, bond and writing, all mills are doing a good business and several new colors in bond papers have recently appeared on the market, in gray, café, salmon, primrose and russet.

The demand for newsprint continues strong and prices are going to be stiffer. Increased production will soon be evidenced in Canada owing to the new unit being added by Price Bros. and also the new machines being installed at Espanola by the Spanish River Pulp and Paper Mills, which will start running in November and add fifty tons a day to the present output. Another machine will also be installed and should be running by the spring of 1920, when the news production at Espanola will be augmented by, at least, one hundred tons daily. Record work has been done in the construction of the necessary buildings. There is an enormous demand for paper specialties of all kinds and

during the past week there was lively buying in both the common and preferred on the stock exchanges which indicates that the public have every faith in the expansion and building of this great industry. From a number of towns in the east and west come reports of new mills to be erected and new companies are being organized every week, while others, who some time ago took out charters to embark in pulp and paper activities, will soon be getting busy on their new plans.

**Paper.**

*News (rolls) at mill, in carload lots . . . . .	\$3.45
*News (rolls) in less than carload lots . . . . .	\$3.52½
*News (sheets) at mill, in carload lots . . . . .	\$3.80
*News (sheets) in less than carload lots . . . . .	\$3.92½
xBook papers (carload), No. 1 . . . . .	\$9.75
xBook papers (ton lots) No. 1 . . . . .	\$10.00
xBook papers (carload), No. 2 . . . . .	\$9.50
xBook papers (ton lots), No. 2 . . . . .	\$9.75
xBook papers (carload), No. 3 . . . . .	\$8.25
xBook papers (ton lots) No. 3 . . . . .	\$8.75
Ledgers . . . . .	18¢ up
Sulphite bonds . . . . .	13½¢
Light tinted bonds . . . . .	14½¢
Dark tinted bonds . . . . .	16¢
White Wrappings . . . . .	\$5.25
Writings No. 2 (MF) . . . . .	12½¢ up
Coated book and litho, No. 1 . . . . .	\$12.75
Coated book and litho, No. 2 . . . . .	\$11.75
Coated book and litho, No. 3 . . . . .	\$11.00
Coated book and litho, colored . . . . .	\$13.00 to \$14.50
Grey Browns . . . . .	\$5.25
Manila, No. 1 . . . . .	\$7.35
Writing* No. 1 (S. C.) . . . . .	13¢ up
Fibre . . . . .	\$7.35
Manila B. . . . .	\$5.60
Tag Manila . . . . .	\$6.00
Englazed kraft . . . . .	\$9.00
Glazed kraft . . . . .	\$9.00
Tissues, bleached . . . . .	\$1.35 to \$1.90
Tissues (unbleached sulphite) . . . . .	\$1.25 to \$1.75
Tissue, cap, per ream . . . . .	\$1.00 to \$1.40
Tissues, manila, per ream . . . . .	.90¢ to \$1.20
Natural greaseproof . . . . .	13¢
Bleached grease proof . . . . .	17¢
Genuine vegetable parchment . . . . .	24¢
Bleached white glassine . . . . .	22¢
Drug papers, whites and tints . . . . .	.9¢
Paper bags, manila (discount) . . . . .	.35 per cent
Paper bags, kraft . . . . .	27½¢ and 10 per cent
Confectionery bags . . . . .	.34 per cent
Gusset bags (manila) . . . . .	.35 and 15 per cent
Straw board . . . . .	\$70.00
Chipboard . . . . .	\$70.00
Vat lined chip board . . . . .	\$75.00
Filled wood board . . . . .	\$78.00
News board . . . . .	\$80.00
Double manila lined board . . . . .	\$90.00
Manila lined folding board, chip back . . . . .	\$7.50
Pulp folding board . . . . .	\$9.50
Jute board, No. 3 . . . . .	\$70.00
Tag board . . . . .	\$120.00
White patent coated board . . . . .	\$125.00
Grey folding board . . . . .	\$115.00
Pasted board . . . . .	\$95.00

\* For Canada only.  
 x These prices are for machine finish, super-calender one-half cent higher.

# WOOD PULP TRADING CO., Ltd.

Rio de Janeiro, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Buy Pulp and Paper for Export  
Quotations Solicited.

**Pulp Prices.**

F.O.B. Mill.

Crotonwood pulp . . . . .	\$29.00 to \$31.00
Sulphite, news grade . . . . .	\$70.00 to \$75.00
Sulphite, easy bleaching . . . . .	\$87.50 to \$90.00
Sulphite, bleached . . . . .	\$110.00 to \$115.00
Sulphate . . . . .	\$87.50

**Rag and Paper Stock Prices.**

No. 1 white envelope cuttings . . . . .	\$4.30
No. 1 soft white shavings . . . . .	\$4.00
White Blanks . . . . .	\$1.45
Heavy Ledger Stock . . . . .	\$2.45
No. 1 magazine . . . . .	\$2.25
No. 1 book stock . . . . .	\$1.50
No. 1 manila . . . . .	\$2.40
No. 1 print manila . . . . .	\$1.15
Folded news . . . . .	.80c
Over issue, news . . . . .	.95c
Kraft . . . . .	\$3.00
No. 1 clean mixed papers . . . . .	.70c
No. 1 shirt cuttings . . . . .	.14c
No. 1 unbleached cotton cuttings . . . . .	.13c
No. 1 fancy shirt cuttings . . . . .	.91c
No. 1 blue overall cuttings . . . . .	.91c
Bleached shoe clip . . . . .	.11c
White cotton hosiery cuttings . . . . .	.13c
Light colored hosiery cuttings . . . . .	.10c
New light flannelette cuttings . . . . .	.91c
No. 2 white shirt cuttings . . . . .	.12c
City thirds and blues (repacked), No. 1 . . . . .	.41c
Flock and satinettes . . . . .	\$3.15
Tailor rags . . . . .	\$3.00

**NEW YORK MARKETS.**

New York, August 16.—Increasing strength and activity are the cardinal features of the paper market in the United States. Reports from all sources, including manufacturing and jobbing circles, tell of a brisk demand for practically every kind of paper, and buyers in numerous sections of the country acknowledge they are having unusual difficulty in covering their wants. Mills in the great majority of cases are sold up so far ahead that they are refusing to accept more orders, many even turning down their regular customers when asked to take on additional bookings.

Whether or not the present activity is that which ordinarily develops in the paper market along about October, being advanced several months because of the hesitancy of buyers to operate during the first half of the year, is a question which many members of the trade are pondering over and wondering if the fall season will be characterized by the dullness that customarily prevails during the summer months. However, indications, without the question of a doubt, point to a continuance of trade activity for some time to come. Well-posted men in the industry point out that the current brisk business is nothing more than the sequence to the long period of almost idleness which the market had to pass through, and that the usual stimulation of demand in the fall is practically sure of arising this year as in the past. Stress is laid on the fact that buyers refused to operate immediately following the signing of the armistice and for some time thereafter, in the belief that prices would decline, and that now that the readjustment of the market made necessary by the transition from war to peace-time conditions has been completed, buying is for current needs, with buying for advance stocks not yet begun. Price advances have been recorded during the past few days in fine papers, newsprint, boards and other

grades. Representative manufacturers of writing papers withdrew all quotations several days ago and afterward issued new price lists at advances of two and three cents per pound in most of their lines. Board prices have sharply advanced, quotations in some instances being shoved up as much as \$10 per ton. Plain chip board has sold at \$60 per ton, denoting a rise of fully \$10, and prices on other kinds of board have been correspondingly advanced.

The market for newsprint is very strong. Mills are shipping the great bulk of their output to contract customers about as quickly as it becomes available, and such supplies as are to be had in the open market buyers are scrambling for. Sales of spot lots of news have been reported at as high as 5.25 cents at the mill, and consumers seem to be ignoring the matter of price in their anxiety to secure paper, publishers presumably feeling that they can better afford to pay high prices for paper than turn down advertising.

Wrappings are moving into consuming channels in increasing volume and at firm prices. Mills making this class of paper also are sold well ahead and are generally confining new orders to regular customers. Tissues are in good demand and steady in price. Book papers are in a very firm position. Manufacturers are contracted far ahead for their production and are reluctant to accept further engagements irrespective of the prices they can succeed in getting.

**Ground Wood.**— Offerings of mechanical pulp by grinders are being quickly snapped up by consumers, who are actively seeking fresh supplies and who acknowledge they are experiencing trouble in covering their requirements. Thirty dollars per ton at the producing mill is now the established market value of spruce pulp of prime quality, and while occasional sales at a dollar less are reported, sizable tonnages are very nearly unobtainable under the first named figure. Grinders are prevented from accumulating stocks, as they usually do at this season, and signs point to a serious shortage of ground wood before long if the demand continues at its prevailing rate.

**Chemical Pulp.**—Consumers are literally scrambling for available supplies of some kinds of chemical wood pulp. The voluminous demand in evidence during the past two months has practically cleaned up all surplus stocks, and with mills sold ahead and shipping the bulk of their output as soon as it becomes available, buyers are having a hard job in locating accessible supplies. These conditions apply especially to bleached sulphite, which is exceptionally scarce and which is quoted at strong prices. Producers of strictly No. 1 standard bleached sulphite in the States seem prone to ignore offers at less than 6 cents per pound at the shipping point, and some are said to be quoting beyond this level. Newsprint sulphite also is scarce, and available spot lots are firmly held at \$70 to \$75 per ton at the mill. Soda pulp is eagerly inquired for and is difficult to locate in sizable amounts. Quotations range from \$90 to \$100, with manufacturers said to be frequently turning down orders at less than \$95. Foreign pulp is quotably firm as would be expected under the circumstances, for with consumers in this country having trouble in securing domestic pulp they are turning more to importers to help fill their wants. Available supplies in Scandinavia are reported also to be dwindling, which of course is a strong market factor. Consumers in England, France and other European countries are said to be buying freely in Sweden, Norway and Finland and to be outbidding American buyers, with the result that poten-



tial supplies on the other side appear to be smaller than most members of the trade on this side of the Atlantic have been willing to believe them to be.

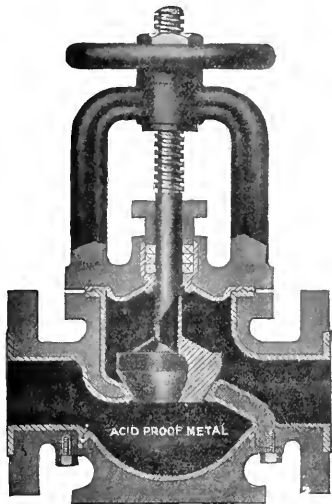
**Rags.**—Demand for rags has eased off somewhat during the current week, and business in the aggregate possibly has involved a smaller tonnage of material than in some time, yet prices have been well maintained and little change which might be described as important has occurred. This apparently is due to the confidence of dealers that supplies of rags in this country are inadequate to cover the requirements of paper mills during forthcoming months, notwithstanding the steady increase in arrivals of rags from abroad, with the result they are holding unsold stocks at strong prices in the face of the lighter demand. New cuttings are particularly strong. Efforts of buyers to secure supplies at lower prices than they recently have paid meet with very little if any success, dealers contending that they have to pay fully as high prices at production sources as in the past, and that they therefore must obtain as high prices in sales to consumers. Sales of No. 1 white shirt cuttings have been noted at 15 to 15.50 cents f.o.b. New York, and most packers are demanding the higher figure. Old whites are quotably firm at a basis of about 7.50 cents per pound New York, while repacked thirds and blues are being disposed of in fairly large quantities at around 4.50 cents at the shipping point. Roofing rags have eased off slightly in price, probably because of the heavy receipts of rags of this character from Europe, revised quotations ranging between 2.80 and 2.90 cents f.o.b. New York for No. 1 packing.

**Paper Stock.**—A strike among collectors and sorters

of waste paper has almost completely tied up trading in this commodity this week. Their demands for an increase in wages, shorter working hours and recognition of their union being refused, the employees of the various packing houses in this city walked out last Monday, and they succeeded in stopping operations to such an extent that about all the old paper packers have had to sell during the week has been that which they happened to have on hand when the strike was called. At this writing, the strike seems very near a point of settlement, the differences between employees and employers having been arbitrated, and hopes are expressed business can be resumed on a normal scale next week. The lack of available supplies naturally has had a strengthening influence on values, and sharp advances have occurred in prices. Folded newspapers have sold at 85 cents per hundred pounds f.o.b. New York, and No. 1 mixed paper at 70 to 75 cents, these prices being about \$2 a ton above the levels previously ruling. Soft white shavings have advanced to a quotational range of 4.25 to 4.50 cents a pound at the point of shipments, while heavy book stock has readily commanded 2.25 cents, No. 1 kraft paper 3 to 3.25 cents and No. 1 manilas 1 to 1.10 cents.

**Bagging and Rope.**—Business of a steady character and of moderately large volume is reported current in old rope and strings, with sales of No. 1 Manila rope at 5.75 to 6 cents f.o.b. New York, and of mixed strings at 2.75 cents noted. Fresh buying by manufacturers has dropped off but sellers as a rule have quite a few unfilled orders on hand, which absorb most of the supply found available. Scrap bagging is in fair demand and is selling at around 3 cents f.o.b. New York for No. 1 packing.

## ACID RESISTING PUMP VALVES



We wish to call your careful attention to our line of Acid resisting Pumps, Valves and Fittings, they are absolutely perfect in detail. In price comparison with Acid Resisting Bronze Valves etc. they make an enormous saving in your initial cost.

For lining Acid Tanks, Agitators, and Sulphite or Sulphate Vats, Hoyt's Sheet Metal will give far better service than the ordinary Chemical Sheet Lead in the market. If you will write us stating conditions under which your Sheet Lead is operating, we would be pleased to go into the matter fully and will convince you of the economy of Hoyt's Sheet Metal.

WRITE FOR CATALOGUE

See our display in the Machinery Building in the Canadian National Exhibition showing a full line of Lead Goods, including Lead Lined Products, Pumps, etc., for acid use.

## HOYT METAL COMPANY

FACTORIES: London, England. Toronto, Canada. St. Louis, Mo. New York, N. Y.

**KENWOOD MILLS, LTD., HAVE NEW PLANT.**

The new Canadian mill of F. C. Huyek & Sons, located at Arnprior, Ont., and operated under the name of Kenwood Mills, Ltd., was formally launched on its career Monday, June 23rd.

Early in the year 1918 F. C. Huyek & Sons of Albany, N.Y., manufacturers of the well known Kenwood Felts and Jackets for the paper trade, decided that the time was ripe to serve the Canadian paper manufacturers by locating a plant in Canada.

Recognizing the necessity for building up a strong and self-contained Canadian organization that would be able to satisfy the needs of the Dominion in the broadest sense, they secured the services of Mr. H. M. Ashby, who for several years has been the Managing Director of the Sherwin Williams Company of Canada. Mr. Ashby's experience in managing one of the largest

carried on with equipment added from time to time as long as the government required, and then the new equipment was used to supply the paper industry as rapidly as possible.

The new plant is now completely equipped to meet the needs of the paper industry for the well known brand of Kenwood Felts and Jackets, which have been so long made by the firm at their Albany plant. The machinery installed is without doubt the very best that has ever been gathered together for this purpose, and the buildings are the latest and best model of one-story, saw tooth construction, with splendid light and ideal working conditions. The ground on which the plant is built is level and covers nine acres, and the arrangement of the buildings allows an immediate expansion whenever necessary, without disturbing the work in process.

Among the advantages which decided F. C. Huyek & Sons to locate at Arnprior are soft water in abundance, cheap electric power, a plentiful supply of good labor, excellent living conditions, low taxes, and a very central location for shipping to all parts of Canada, the property being located on the main lines of the Grand Trunk and Canadian Pacific railways.

The local end of the business since its purchase and the erection of the new mill has been supervised by Mr. J. T. Griffith, one of the previous owners, whose familiarity with local conditions has been a very great help in getting the proposition started, but ill health, which was one of the causes of Mr. Griffith's selling the business has prevented him carrying on the management any longer.

Mr. W. W. Weed, Secretary of the company, is now in charge of Kenwood Mills, Ltd., as General Manager. Mr. Weed has been connected for some years with the parent company in Albany and is thoroughly familiar with their methods of doing business.

The selling of the product of the mill will be in the hands of Messrs. F. J. McGovern, W. A. Yule and D. C. Jordan. The many friends in Canada of these gentlemen will be glad to know that they are now ready to call on them and serve them with the backing of a well equipped Canadian factory.

The erection of the new factory has been constantly under the supervision of the Albany staff, including Messrs. J. C. Standish, Supt.; George M. Wallace, designer, and E. J. Wilson, chief engineer, and the output of the factory has been, and will be, under the same close supervision and inspection as that given to the Kenwood products shipped from Albany.

The meeting at Arnprior, on June 23rd, 24th and

(Continued on page 720.)



Staff of Kenwood Mills Ltd.

and most successful concerns in the Dominion, assures to the new venture that broad and sympathetic understanding of Canadian conditions so necessary to success.

On July 2nd, 1918, after a careful canvas of the field, Mr. Ashby purchased the plant and business of Griffith-McNaughton, Ltd., Arnprior, Ont., for F. C. Huyek & Sons and they immediately began plans to build a modern and up to date plant for the manufacture of papermakers' felts and jackets.

Ground for the new plant was broken early in August, 1918, and contracts immediately let in England, Canada and the United States for the best and most modern machinery obtainable. Much of this machinery had to be made to order to the special plans and designs of F. C. Huyek & Sons.

Griffith-McNaughton's mill had been built for the manufacture of papermakers' felts, but at the time of its sale to F. C. Huyek & Sons was operated exclusively on government orders for woolsens. This work was

# CANADIAN KRAFT LIMITED

THREE RIVERS, : : CANADA.

Dealers in

WAYAGAMACK Sulphate Pulp and Kraft Paper, Glazed and Unglazed.

Agencies

CANADA—Pulp and Paper: Hodge-Sherriff Paper Co., MacKinnon Bld., Toronto.

BRITAIN, IRELAND & FRANCE—Paper: Hodge-Sherriff Paper Co., Craven House, Kingsway, London, W. C. 2.

UNITED STATES—Pulp: The Pulp & Paper Trading Co., 21 E. 40th St. New York.

**MATTAGAMI  
PULP & PAPER CO., LIMITED**

BANK OF HAMILTON BUILDING - TORONTO, CANADA

Specialize in

**Strong Easy  
Bleaching Sulphite Fibre**

Manufactured from Clean Sound Spruce

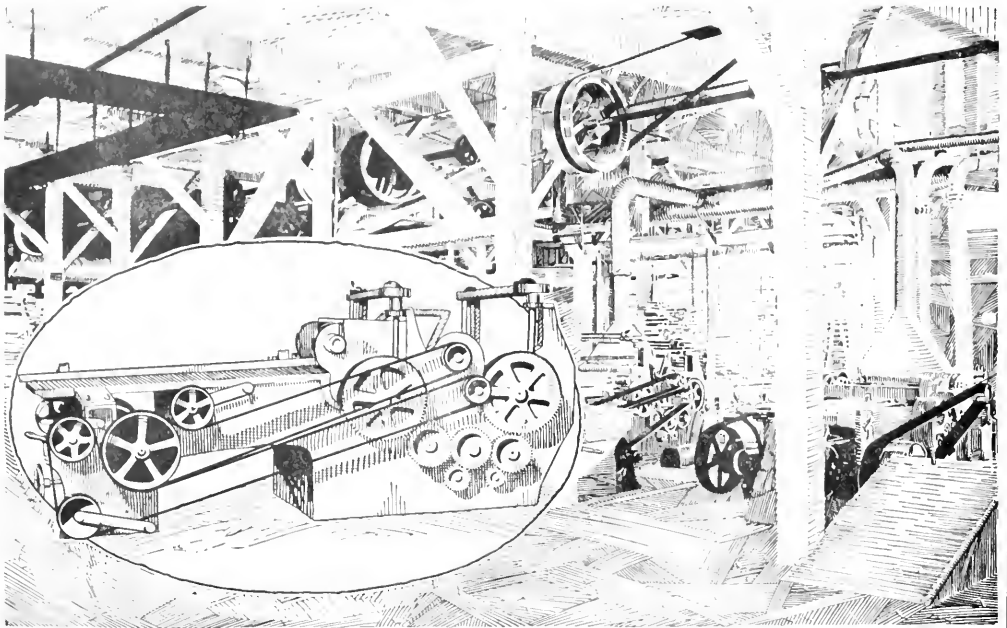
New Modern Mills at SMOOTH ROCK FALLS, ONTARIO

Bleached and Unbleached  
**WOOD PULP**  
of every description

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**M. GOTTESMAN & COMPANY**  
Incorporated  
18 E. 41st Street New York, N.Y.

Established 1886



Scene in the Haley Mills showing Goodyear Extra Power Belting in use.

## ANOTHER CONVERT:

HALEY & SON, Lumber Merchants.

Gentlemen,

We want to tell you about the Goodyear Extra Power Rubber Belting we bought for our new mill two years ago, and what great satisfaction this Belting has given us. As you are aware, we bought this kind of belting from you for the equipment of our mill **THROUGHOUT**, even to planers and matchers. We were skeptical at the time about using this belting on our matchers, especially on the side heads, as that is a very trying place for any kind of a belt. We concluded we would try your rubber belting, as we thought then, as a makeshift. Now it has been something over two years since we belted up our matchers with your belting and the original belts are yet on these machines and still giving good service. We thought where this belting of yours had proved so eminently satisfactory that we should tell you just as we thought about it, and now know we are giving you this testimonial of Goodyear Extra Power Rubber Belting entirely at our own initiative.

Yours truly,

HALEY & SON.

**GOOD YEAR**  
MADE IN CANADA

# Almost Unbelievable Power-Saving and Economy

Time and again we have found purchasers of Goodyear Extra Power Belting openly skeptical that it would live up to our promises.

Time and again they have told us not only of lower belting costs, but also of increased and faster production, time and power saved.

Today there is no reason for any plant to buy belting on promises.

On file in our office are letters which enable you to buy belting by proof.

Records of Goodyear Belting performance.

Records of extreme long-life which means economy.

Records of pulley-gripping, non-slip qualities which save power.

Records of work under strenuous conditions of heat, cold, damp, acids.

Records of strength and flexibility.

Records which prove that without Goodyear Extra Power Belting enough power is wasted in Canada every year by poor belts to pay a big dividend on Industry's capital.

Some of this power is being wasted in your plant. Better belting, scientifically applied, will save you money. Without obligation to you, a belting man, trained by Goodyear, will call and make a record of your needs and experiences. Our recommendation will come from engineers who fit belts to conditions. Phone, wire or write the nearest branch.

## The Goodyear Tire and Rubber Co. of Canada, Limited

Branches:—

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto,  
Hamilton, London, Winnipeg, Regina, Calgary,  
Edmonton, Vancouver.

# EXTRA POWER BELTING

(Continued from page 716.)

With the executive and operating staffs of the two companies was for the purpose of making a final inspection of the completed plant, and planning for the future work of the Canadian organization.

The meeting was conducted by the President, Mr. E. N. Huyek, who with the Vice-President, Mr. F. C. Huyek and the Managing Director, Mr. H. M. Ashby, carefully inspected each detail of the mill and its

consideration of the plans prepared by their engineers and Messrs. Richards & Abra, architects of Ottawa, ground was broken at once by Mr. E. N. Huyek, the President for the new buildings.

The officers and staff of Kenwood Mills, Limited, are as follows:—

Officers: President, E. N. Huyek; Vice President, F. C. Huyek; Managing Director H. M. Ashby; General Manager and Treasurer, J. T. Griffith; Secre-



equipment and passed on them for the operation of the plant.

All conditions surrounding the plant seemed so promising to the directors that they decided on the immediate erection of new buildings that would double the size of the present mill. After careful

consideration, W. W. Weed,

Directors: J. T. Griffith, H. M. Ashby, E. N. Huyek, F. C. Huyek, J. C. Standish.

The group picture taken in front of the new mill show the men who took part in the meeting and who are connected with the operation of the plant.

## GRACE & CO., LIMITED

### MONTREAL, QUE.

EXPORTERS & IMPORTERS.

BLEACHED — EASY BLEACHING — UN-  
BLEACHED PULP — KRAFT PULP —  
GROUND WOOD PULP

KRAFT WRAPPING — SULPHITE WRAP-  
PING — MANILAS — FIBRES — BOX-  
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NEWSPRINT — WRITINGS — BONDS —  
LEDGERS — OFFSETS —  
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TABLE PARCHMENT AND SPECIAL-  
TIES.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

Published every Thursday by The Industrial and Educational Press, Limited, Garden City Press, Ste. Anne de Bellevue, 'Phone 165.

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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

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No. 35

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# *Claflin Continuous Beater*

*One-quarter the floor space*

*One third the cost*

Claflin Continuous Beater for Beating and brushing out repair stock.

For refining ground wood sulphate and sulphite tailings this machine stands in a class by itself.

Three Claflin Continuous Beaters will handle as much stock as six tub beaters, will cost one-third as much and will occupy only one quarter the floor space.

*Let us quote.*

*Everything Mechanical for Pulp and Paper Manufacture*

## **The Canadian Fairbanks-Morse Co., Limited**

*"Canada's Departmental House for Mechanical Goods"*

Halifax  
Quebec

St. John  
Ottawa

Montreal  
.Hamilton

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Calgary

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Victoria

Vancouver



# EDITORIAL

## *DON'T PUT ON THE SCREWS.*

Several representatives of British pulp and paper importing concerns have recently visited Canada and have invariably expressed themselves as impressed with Canada's ability to supply the British market with practically everything in the way of pulp and paper that is not already manufactured on the little island and even to supplement the materials turned out in insufficient amounts by the mills of Britain. These trade ambassadors not only like the quality of Canadian goods and appreciate Canada's almost boundless resources of raw materials from which to make them, but they like the Canadians themselves and intimate that they will derive not only profit but personal pleasure in dealing with the pulp and paper makers of the Dominion. It has been a pleasure to the Pulp and Paper Magazine to assist in a small way in bringing together some of these English gentlemen and possible suppliers of their requirements.

The visitors, who, by the way were delightful to meet and talk with, have emphasized two points which might well be seriously considered by Canadian manufacturers. The first is the development of lines of paper manufacture, of which Britain has any need and the second is the need to be very careful in the matter of price as a little over-anxiety on the part of the manufacturer to get a fair return may lead him to scrape a bit too deep and hurt the prospects of future trade. A customer once stung is shy of the hornet—or perhaps the wasp, since we are discussing paper makers.

A number of lines have been indicated as holding very promising prospects for the development of our industry. Among them might be mentioned the manufacture of kraft wrapping papers, particularly light weight papers which are machine glazed, sulphite tissues of various grades, and some classes of boards. The shop-keeper is said to favor the MG kraft wrapping, both because of its lightness and strength, and also because the smooth surface collects but little dust and this is very easily shaken or blown off. The MG machine is not particularly expensive and might well form a larger part of the equipment of Canadian mills than is the case at present. There are a number of sulphate pulp mills where it seems entirely feasible to install a machine of this kind and there are concerns in England who would be willing to contract for the entire output, providing of course that a satisfactory price agreement could be made. Canada, of course, is fully as well equipped, if not better supplied with raw materials for making kraft pulp and paper than the

Scandinavian countries. It is probable that freight rates will always be an adverse condition, but it would be difficult to find an industry or a mill that can operate without any adverse conditions. A greater trade in this line of manufacture might encourage the importation from England of larger amounts of the chemicals required in their manufacture. This in itself would assist both the financial relations and the shipping situation as it would offer a greater inducement for British shipping to come to our ports as well as furnishing Canadian vessels with return cargoes. While we are touching this matter it might be appropriate to mention the present excellent opportunity of purchasing from England such materials as must be bought outside of the Dominion, providing satisfactory service can be obtained. The exchange rates as regards England, Canada and the United States strongly favors such a direction of trade currents.

One of the other lines which Canada has been strongly urged to develop is the manufacture of bleached sulphite tissues. Here again Canada has every advantage in the way of raw materials. We have excellent timber supplies furnishing a pulp whose fibre under modern methods of manufacture is fully the equal of that produced in any other country under the sun. We have modern mills, well equipped and ably managed and situated where supplies of every description can be obtained with almost no danger of interruption. Wood, water power, and limestone are found in many cases almost within walking distance of the mill and sulphur, coal and other supplies which are required in greater or less amount can be conveniently obtained and their availability is practically insured. We have mills making the highest grade of bleached and easy bleaching fibre for which there is an ever-increasing demand and several of these mills can readily increase their production as occasion requires. We lack the full equipment for converting much of this material into the next highest state of completion and we are almost without facilities for the manufacture of certain grades of tissues and other lines. The manufacture of grease-proof papers, for instance, is but a side issue with one or two mills whereas it might very well occupy the entire attention of several machines. In fact, the situation at present in some of these lines is that Canadian mills are not supplying domestic requirements and mills are declining to make outside connections because of their difficulty in meeting the demands of regular customers.

We are in some of these respects very much like the farmer who sells his hay and buys milk for his family

instead of maintaining a herd and converting his raw material into the finished product and realizing a better profit on his establishment.

The matter of price is a very delicate one to approach because of the differences in the ability of the consumer to pay and of the manufacturer to produce. We are firmly convinced, however, that it is only a matter of selfishness on one side or the other for the last possible cent of profit that is retarding a number of very desirable business connections, which if established on a generous unselfish basis might readily be expected to continue for many years. It is quite probable that there are some people in the pulp and paper industry, as there are in any other industry, who have taken advantage of the exigencies of recent years to demand the pound of flesh, and while in some instances they may have obtained it there have been indications that it has not been obtained without the taking of some blood as well. We are firmly convinced that a Shylock is no more popular in these days than he was in the time of Shakespeare. It is our earnest hope that the pulp and paper industry of Canada may be, and belief it is, very shy of Shylocks. In the establishing of business connections at this time there should be shown the greatest possible generosity and only a fair profit be demanded or accepted. We are fully aware that the English buyer is a shrewd business man and will endeavor to obtain his goods as cheaply as possible, but we do not think that there are many of them who will endeavor to take an unfair advantage of the Canadian producer by working on his sympathy for a war-stricken country, or by other means, but there should be a very pronounced give-and-take feeling between the two countries on the point now of laying a new foundation for the greatest reciprocal structure of commerce that the world has seen and which has possibilities of even exceeding in some respects the phenomenal growth of trade relations between Canada and the United States. There is bound to be a decided impetus to trade within the Empire and if this is going to be wholesome and helpful it must be on a basis of generous treatment and mutual understanding.

#### A FORESTRY CAUCUS.

At the summer meeting of the Technical Section of the Canadian Pulp and Paper Association somebody "wished" a large job on a small man when it was voted that the editor of the Pulp and Paper Magazine should call together representatives of the Woodlands Section, the Technical Section, the various forestry associations and education and other organizations that might be interested or helpful in forwarding the establishment of correct methods of preserving and utilizing the forests of Canada. The size of this order is manifest without any great degree of acquaintance with the subject, but it becomes more apparent when we consider the large number of able men who have

devoted a life-time of study to the subject, but have not yet come to a common satisfactory conclusion as regards proper practice to be followed in all cases.

It may seem on the face of the matter that the motion put to the meeting of the Technical Section was in a way finding fault with the apparent lack of progress that has been made in the conservation of our forests, but it will be seen that the suggestion is rather a bit of helpful criticism. A moment's consideration will show that although we are still far from our goal as regards the proper conservation and the complete utilization of our forest resources, we have made remarkable progress. This has been almost entirely along the line of fire protection and no reasonable man will dispute the statement that our forests are better protected to-day than men a score of years ago even hoped would be possible.

In spite of the progress that has been made in this respect there is still much to be done in perfecting methods of fighting fires, both as to organization and equipment and particularly in the matter of preventing fires. Legislation has done much in some of our provinces by requiring permits from settlers and the Gentlemen of the Bench are to be congratulated in the way the prosecutions for failure to obey these restrictions have been conducted.

There are still two great menaces in regard to starting of fires, the thoughtless man in the woods and the practice of leaving slash after logging. Both of these matters require legislation and the former will doubtless be taken care of before the latter. Practice varies, local conditions vary, but there surely must be some fundamental action possible which will still further minimize the greatest hazards to the forest, the camp fire and the slash tangle.

Another matter which has not received very much thoughtful consideration from the law makers is in regard to logging regulations. On crown lands there are some rules of questionable value although they have for the most part served some good purpose. The private owner is still permitted to do as he likes with his woodland irrespective of the amount of danger he creates for his neighbor, whether it be his government or an individual. He may cut off a steep hillside until hardly a sappling remains and the entire interlocking tangle of tree roots gradually dies out and the soil becomes loose so that the rain storms, no longer broken into a gentle shower by branches and leaves, tears away the soil, carries it down the streams to form sand bars to block navigation and leave deposits of sterile earth on once fertile farms, while in the wake of the torrents we find bare rocks that will never again bear the crop of magnificent timber trees that should have been their perpetual ornament and contribution to the welfare of our people. And he may leave slash!

Action is needed along these many lines and action cannot be taken too soon. It is, therefore, the re

spectful request of the Editor that he be given the support of the many Canadians who are interested in this vital problem in the calling of what might be called a Forest Caucus. In conversation with one deeply interested in the subject it was suggested that at such a caucus a plan of action, perhaps a forestry platform, could be drawn up and a set of definite recommendations be prepared for the serious consideration of a joint meeting at the time of the annual convention between the forestry and lumber associations, and the Woodlands Section and the Technical Section of the Canadian Pulp and Paper Association. All those who are interested in this matter are urged to send in their criticisms of this plan and suggestions at the earliest possible moment to the Pulp and Paper Magazine. It is thus hoped that during the fall months a meeting of a few enthusiasts may be arranged and a program prepared which will serve at least as something to shoot at when the joint meeting is called.

#### WHY GO BACK TO SCHOOL.

This is the last week of the holidays and parents, teachers and children are looking forward with different feelings to the reassembly of the classes. To teachers and pupils there is a fixedness, a compulsion and a necessity about the date but for the parents in this province of Quebec there is none.

During the present week hundreds of fathers and mothers will discuss whether John or Harry or Mary shall return to school or whether they will not allow them to go out and "get a job"—to help eke out the family exchequer.

After all it is just a matter of arithmetic. If a boy is just ready to enter High School he can probably earn six dollars a week for the first year and average say ten dollars a week for the next three years. That is to say he can earn close upon \$1,500 if he stays away from school.

But take the other side of the ledger. If the boy continues to go to school for another three years, at the end of his course he will be able to earn on an average more than the boy who stopped short of the High School and he will be able to earn it for the thirty or forty or fifty years of his earning life. The balance in money is on the side of the boy who returns to school.

Then along comes the pessimist and the Job's comforter and says: "Well if he goes back to school and gets cram full of book learning what will it profit him? Does not a plumber earn more than a schoolmaster and a carpenter or smith more than a clerk? That is an unfair argument. The trained carpenter and the skilled plumber and the blacksmith with ideas hammered out on the anvil of his school-books earns more than the carpenter or plumber or smith who left school before he was half way through.

But after all is everything to be measured by the dollar standard? Is there not a better opportunity for happiness, for contentment and for service, for the boy or

girl with the good education; and in the coming days service to our fellow men and to our country is going to count.

This is the problem for the fathers and mothers, and as they are the trustees so with them alone must rest the decision.—*Montreal Herald*.

#### COBWEBS.

Workmen in the Laurentide Paper Mill now wear uniforms. Does the machine-room look like a dairy or an armory?

The Montreal "Witness" deploras the fact that Americans are exploring the national resources of Canada. The only way to see ourselves "as others see us" is to let them have a look. One gets a different view when on the outside, looking in.

As someone has remarked, "It is not so much the high cost of living as the cost of high living that makes it difficult for the purse to catch the grocer's bill."

The moving picture industry does about as much for the formation and education of public opinion as a large part of the daily press, and yet the moving picture industry is taxed at every turn while the daily press is subsidized at the expense of the Post Office, the paper-makers and the Government's advertising account. Why this discrimination?—*Financial Times*.

Remember when you "take chances" you are "taking chances" away from the little ones. Their chances for a good bringing up; Their chances for an education; Their chances for final success depend largely on the chance you give them. *Safety First!*—Selected.

A piece of the emery wheel, with which an employee of the Spanish River Mills was sharpening a saw, tried to put his eye out. But he believes in Safety First, and had his goggles on. In consequence of his common-sense, he can still smile. Carefulness is a habit that pays well.

With reports of low stocks of sulphite in Scandinavia, due to large demands in England and elsewhere, the stocks of some of our pulp mills will doubtless be higher.

#### CONTRIBUTED BY A BACHELOR.

There is a woman jail keeper at Aurora, Ill. But that's nothing to make a fuss over. There are quite a number of them in Grand'Mere. If you don't believe it, ask some of the married men you happen to know.—The Laurentide "Digester."

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See our exhibit at the Fifth National Exposition of Chemical Industries, Coliseum and First Regiment Armory, Chicago, week of Sept. 22.

# National Standards for the Paper Industry

By WILLIAM BOND WHEELWRIGHT,  
Appleton, Wis.

It was said of a certain Boston family that they had customs but no manners. It might fairly be said of the Paper Trade that it has customs but no standards.

Before the benefits of Standardization forced upon us by the war have been forgotten in the scramble for business, let us pause for consideration. Why not build upon the foundations of sensible trade customs—sensible trade standards?

Such quality standards as exist to-day in Paper Making only represent the accomplishments of certain individuals whose grades are imitated by newer or less original competitors.

Competition in almost all classes of paper has led to confusion, both of terms and quality, and to a multiplicity of grades. The result is bewildering, the dealer's stock is burdened with an unreasonable and frequently an unbalanced variety of items, consequently, the general expense of manufacture and distribution is increased.

Take Bond Papers for example: It is difficult even to define the term. Originally Crane produced a fine quality of writing paper made strictly of linen rags, without mineral filler or other adulterants. It was used by a certain printer of stock certificates, who on his re-order is said to have asked for some more of that "bond" paper.

To-day the catalog of a certain typical paper merchant lists sixteen alleged "Bond Papers" comprising 316 stock items.

The number of items carried in each grade varies from 1 to 110. Now as the only raw materials used in making these papers are linen and cotton rags and bleached sulphite wood pulp, the number of grades offered in the trade is beyond reason. Their existence is the result of competing mills edging in between recognizably different grades with an intermediate priced line.

If there were a reasonable interval between prices, the differences in quality would be readily appreciated, but as it is, experienced paper men are often at loss to classify samples or to identify their own papers except by watermarks.

The extremes in values in the price list quoted range from sixteen and one-half cents per pound to forty-five cents per pound. In other words, an 8 1/2 x 11 letter sheet in No. 20 substance weight of the best rag bond is worth five mills as against one and sixty-five one-hundredths mills for the cheapest sulphite sheet.

The absurdity of 14 intermediate prices is more striking for translating price per pound into price per sheet unit. Particularly when it is realized that the cost of dictating and typing the average business letter and printing the heading is far greater than the price of the stock, and is practically as costly on the cheapest as on the best.

In buying cigars a man usually has a definite idea of what a smoke is worth to him, whether it be a ten, fifteen or twenty-five cent cigar; why should we not derive at our paper standardization on the same basis, admitting competition on general stock orders to be

decided between qualities consistent with a reasonable scale of prices?

Suppose we arbitrarily adopt six grades of Bond Papers, requiring each to pass certain minimum specifications as to quality and priced consistently as follows:

Standard Bonds Substance No. 20—Paper 17 x 22.	Grade	Price per M	Sheets, Per Lb.
No. 1 Linen	.....	\$20.00	50 c.
No. 2 Rag	.....	16.00	40 c.
No. 3 Rag	.....	12.00	30 c.
No. 4 Rag	.....	8.00	20 c.
No. 5 Watermarked Sulphite	.....	7.00	17 1/2 c.
No. 6 Unwatermarked Sulphite	.....	6.00	15 c.

Suppose we also agree to a "limitation of armaments" as to size, weights and colors. Trade customs have already decreed that bond papers be carried in three sizes, and their half sizes if desired: 22 x 34, 24 x 38 and 28 x 34, in the following substance weights: \*13, 16, 20 and 24. Colors limited by the War Industries Board to five have been increased again, in one case to twelve. For most purposes five is sufficient, but ten should be liberal, and might well be established as a limit. A well-balanced stock line could be adopted as follows (see table on next page), and would contain only 197 items in six qualities as contrasted with the jobber's list of 316 items, sixteen different brands.

The adoption of such a plan, while calling for many readjustments, is not so radical as might seem at first, and in addition to establishing definite national standards of quality, offers the following advantages.

The manufacturer would produce more efficiently because his attention would be concentrated on a few lines, resulting in increased production, greater uniformity, and better workmanship.

His incentive would be quality—not price, as list prices would be standard for given qualities, and workmanship and service would determine his success. His advertising and selling cost would be reduced, as less sampling would be required and greater turnover effected.

The premium would not be based upon price cutting, so the temptation to scrimp on quality and break into the market by introducing unnecessary intermediate grades would be gone.

In spite of the standardization there would be plenty of latitude for individuality in the color, texture and feel of papers, which otherwise conformed to certain physical and chemical specifications.

The paper merchant would give better service at a lower cost, since his investment could be reduced and his turnover increased. His salesmen would have a more intelligent knowledge of his lines as there would be readily appreciable differences in value, and there would be far less information to be absorbed. Hypocrisy and deception, which present conditions force upon them, would be tremendously decreased.

\*Usually carried in 17 x 22 only.

**Suggested Sizes and Weights for Regular Stock.**

Grades	Sizes and Substance Numbers			Items
	White			
	22 x 34	28 x 34	24 x 38	
No. 1 Linen	13-16-20-24	-20-	-20-24	7
No. 2 Rag	13-16-20-24	-20-	-20-24	7
No. 3 Rag	13-16-20-24	13-16-20-24	13-16-20-24	12
No. 4 Rag	13-16-20-24	-16-20-24	-16-20-24	10
No. 5 Sulphite	13-16-20-24	-16-20-24	-16-20-24	10
No. 6 Sulphite	-16-20-24	-16-20-24	-16-20-24	9— 55
<b>Colored</b>				
No. 1 Linen	-20			
	two colors			2
No. 2 Rag	-20			
	ten colors			10
No. 3 Rag	-20			
	five colors			5
No. 4 Rag	16-20			
	five colors			10
No. 5 Sulphite	13-16-20-24	13-16-20-24	-16-20-24	
	ten colors	ten colors	ten colors	
No. 6 Sulphite	-20			
	five colors			5—142
<b>Total</b>				<b>197</b>

The printer would receive and share with his customers the benefits enumerated. His competition would be fairer as substitution of "almost as good" papers would be next to impossible without the client's consent. Paper represents on the average thirty per cent. of the cost of a printer's work, and introduces a very uncertain element into competition.

The chances of losing a job through the ability of a rival to figure a cheaper stock on the order would be minimized by standardization, and the printer's success under competitive conditions would rest where it belongs, on his ability as a printer. His selling would be simplified, as with only six grades to select from it should prove easier to crystallize the customer's idea as to stock.

Finally, the consumer would receive the benefits accruing from improved service, quality, and more efficient manufacturing and merchandising.

If the allied trades will consider this proposal from a liberal point of view and with a keener appreciation for the ultimate advantages rather than the immediate and temporary inconveniences of readjustment, it is certain that this plan amplified to comprise all grades of printing papers will be promptly undertaken.

The plan is right and the moment opportune, for we all still remember the benefits which emerged from Government restrictions as accepted by the trade, and stocks on hand, which have since the armistice of November 11th been replenished only on a hand-to-mouth basis, are reduced to the smallest minimum consistent with good judgment.

Let me suggest in closing the appointment of a joint committee representing the American Paper Makers, Jobbers, Printers, Lithographers and National Association of Purchasing Agents to meet at an early date in Washington for the purpose of working out in conjunction with the Paper Department, U. S. Bureau of Standards, a rational and a national basis for standard quality in papers.

Mr. Hemming Helin, recently elected to the board of the Whalen Pulp and Paper Mills, has disposed of all his interests in the Fibre Making Processes, Chicago.

**METHOD OF DETERMINING MOISTURE CONTENT OF WOOD.**

The Forest Products Laboratory, Madison, Wis., gives the following directions for determining the moisture content of wood:

1. Select a representative sample or disc of the material. (Pulpwood chips may be taken at frequent intervals or by continuous sampling from the chip conveyor.—Ed.)
2. Immediately after sawing, remove all loose splinters and weigh the samples.
3. Put sample in a drying oven at 212° Fahrenheit (100° Centigrade) and dry until constant weight is attained.
4. Re-weigh the sample to obtain the oven dry weight.
5. Express the loss in weight as a percentage of the dry weight, thus:

Percentage moisture equals: Original weight minus oven-dry weight, divided by oven-dry weight and multiplied by 100.

Short pieces of wood dry out much more rapidly than long ones. In order to reduce the time required for drying, therefore, the length of the sample in the direction of the grain should usually be about 1 inch, or not more than to give the sample a volume of from 2 to 24 cubic inches.

It is important that the weight be taken immediately after the sample is cut, for the material is subject to moisture changes on exposure to the air. The degree and rapidity of change are dependent on the moisture content of the piece and the air conditions to which it is exposed.

In order to insure good results, the weights should be correct to within at least one-half of one per cent.

When placed in the oven for drying, the samples should be open-piled to allow free access of air to each piece.

A miss is as good as a mile, but remember you are not always missed.

# The Suitability of Second Cut Cotton Linters, Cotton Shavings and Hull Fibre for Paper Manufacturers

By OTTO KRESS and SIDNEY D. WELLS.

(Continued from last issue)

Pulping trials (cooks q and r) were also made on a shipment of hull fiber obtained through the courtesy of a cooperating oil mill at Memphis, Tennessee. This fibre has already been described as representing a 75 lb. cut (after removal of a first 75 lb. mattress cut by an ordinary linting machine), produced by passing the hulls after the removal of the meats or kernels between steel grinding or attrition plates.

Microscopic examination of this fiber yielded the following data:

Average length of fiber . . . . .	2.06	m.m.
Longest fiber . . . . .	6.50	m.m.
Shortest fiber . . . . .	.54	m.m.
Fibers under 5 m.m. . . . .	96%	
Fibers over 5 m.m. . . . .	4%	
Average length of fibers under 5 m.m. . . . .	1.88	m.m.
Average length of fibers over 5 m.m. . . . .	6.5	h.m.
Six hundred fragments to twenty fibers.		

In view of the apparently high content of hull fragments in this fiber, an ash determination was made which showed 1.95 per cent. ash based on the bone dry fiber. Bleached waterleaf paper made from cook q, which represents the hull fibers reduced by the process, showed an ash content of 0.29 per cent. An ether extraction showed the raw fiber to contain 3.10 per cent of ether soluble material based on the bone dry weight of the fiber. This loss on ether extraction re-

presents the small amount of oil, wax, coloring matter, etc., present in the fiber and hull fragments. The ether extract was of a slight yellowish color. Alcohol, as might be expected, produced a brownish colored solution on extraction as the cotton coloring principles are readily soluble in this solvent.

In view of the low bleach required to bring the various pulps to a high degree of white and as the fiber (not considering the hull fragments) contains only a small percentage of impurities, some bleach determinations were made directly on the raw stock. Using an excess of bleach, the stock was readily bleached to a fair degree of white, the hull fragments changing from a black to a yellow color. By this treatment, the bleach loss based on the bone dry stock was 4.7 per cent. This determination is of interest as indicating the high cellulose content of the raw material.

Pulping trials were made on the linters, shavings and hull fibers in a 70 gallon rotating iron digester supplied with direct and indirect steam. After digestion, the pulp was blown into the blow pit and the pulp washed, pressed and put through a hammer type shredder and sampled for yield. Bleach determinations were made at this point to estimate the bleach required to bring the pulp to a standard white.

The pulp was broken and washed for one hour in a 25 pound hollander equipped with a drum washer by means of which considerable fine material and liquor residues not removed in the blow pit were washed out. The drum washer was then raised and the bleaching

TABLE I.

Material	Origin	Cook No.	Concentration						Chemical Per 100 lbs. Dry Cotton			Vol. of Liquor per 100 lbs. Dry Cotton	Maximum Pressure
			Bone Dry Factor	NaOH	Na <sub>2</sub> S	Na <sub>2</sub> CO <sub>3</sub>	NaOH	Na <sub>2</sub> S	Na <sub>2</sub> CO <sub>3</sub>	lbs.	lbs.		
			%	g.p.l.	g.p.l.	g.p.l.	lbs.	lbs.	lbs.	gal.	lbs. per Sq. In.		
Shavings	Cincinnati, Ohio	A	90.6	22.3	....	....	21.1	....	....	114	72		
Shavings	" "	B	89.5	33.8	....	....	22.4	....	....	80	52		
Shavings	" "	C	89.5	20.0	....	....	14.0	....	....	84	35		
Linters	" "	D	92.6	25.3	....	....	22.0	....	....	104	35		
Linters	" "	E	93.6	18.1	....	....	12.6	....	....	84	30		
Linters	" "	F	93.7	14.2	....	....	10.4	....	....	88	75		
Linters	" "	G	93.5	13.5	....	....	9.0	....	....	80	110		
Shavings	" "	H	90.4	18.7	....	....	12.0	....	....	77	110		
Shavings	" "	I	90.4	19.9	....	....	12.0	....	....	72	110		
Shavings	" "	J	87.9	26.2	....	....	19.2	....	....	88	20		
Linters	" "	K	93.4	....	....	31	....	....	23	89	100		
Linters	" "	L	94.1	9.9	3.6	....	6.6	2.4	....	80	116		
Linters	" "	M	93.7	9.0	3.6	....	5.7	2.3	....	76	100		
Linters	St. Louis, Mo.	N	91.1	10.0	4.3	....	5.7	2.4	....	69	90		
Linters	" "	2	93.7	11.4	....	....	79.7	....	....	85	100		
Linters	" "	3	95.7	16.2	....	....	11.5	....	....	85	100		
Hull Fibre	Memphis, Tenn.	O	92.0	28.9	....	....	12.1	....	....	50	90		
" "	" "	P	92.2	35.0	....	....	12.6	....	....	49	90		
" "	" "	Q	92.7	25.0	10.0	....	10.8	4.4	....	52	90		
" "	" "	R	92.2	41.0	....	....	18.0	....	....	52	90		
Munition Linters	Nitro, W. Va.		Cooked and bleached at Munitions Plant of Ordnance Department.										
" "	" "		Cooked and bleached at Munitions Plant of Ordnance Department.										

\*Paper made from cooks O & P contained considerable hull fragments as these cooks were made with insufficient alkali and

powder solution added. During the bleaching period which lasted 40 minutes, the stock was circulated with the beater roll well above the bed plate. The bleach-



Fig. 3. Cooked Shavings—High Pressure—Cook 1.

ing action was accelerated by adding very dilute sulphuric acid about ten minutes after the addition of the bleach. At the end of the bleaching period the stock was a brilliant white in comparison with the appearance of bleached sulphite and soda pulp, and the drum washer was lowered and the stock washed for forty minutes, after which no traces of bleach could be detected. The behavior of this fiber on bleaching is decidedly different from the bleaching of soda or sulphite pulp, not only from the stand-point of low bleach consumption but from the extreme rapidity of the bleaching action, the bleaching action commencing and proceeding directly on addition of the bleach liquor.

A two pound sample of the pulp from cook 1 was removed from the blow pit before washing the pulp in the usual manner with hot water. This two pound sample was allowed to cool in a small screen for about 40 minutes and then washed with cold water. Bleach trials on pulp washed with hot water in comparison with the bleach required for the pulp washed with cold water, showed that the latter required practically twice the bleach consumption to bring it to the same degree of white as was required for the sample washed with hot water. Evidently, allowing the pulp to cool to room temperature in contact with the black liquor produced a decided darkening of the pulp, requiring practically double the amount of bleach than pulp from

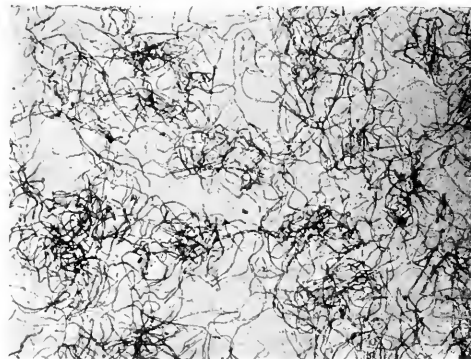


Fig. 4. Cooked Shavings—Low Pressure—Cook C.

which the black liquor was removed at once by washing with hot water. This apparent absorption of the coloring matter from the black liquor was called to

TABLE I—Continued.

Time at Maximum Pressure	Time Coming up to Pressure	Active Alkali lbs. per 100 Dry Cotton	Efficiency of Chem. Cons.	Yield of Unbleached Pulp	Yield of Finished Paper	Stand. Bleach lbg. per 100 lbs. Pulped Cotton	Cleanliness	Cooked	Bleached	Calendered	Wgt. Per Ream, 24"x36"	Bursting Strength per lb. per Ream	Breaking Length	Stretch	Folds
Hours	Hours	lbs.	%	%	%	lbs.					lbs.	lbs.	Meters	%	Number
2.0	2.0	10.5	50.0	71.3	....	6	Good	No	No	No	57	.49	2860	3.5	568
								Yes	No	No	60	.36	2230	3.2	21
3.2	5.2	10.7	49.8	70.3	54.0	5	Good	Yes	Yes	No	47	.27	2020	2.5	10
								Yes	Yes	No	48	.41	3410	3.9	47
6.0	8	9.1	64.9	73.2	....	3	Specky	Yes	Yes	Yes	49	.30	3200	3.0	59
								Yes	Yes	No	47	.45	3240	3.8	62
								Yes	Yes	Yes	60	.39	3590	4.1	71
6.0	1.0	5.3	24.0	94.7	....	4	Good	Yes	Yes	No	49	.45	3310	4.5	134
								Yes	Yes	Yes	50	.41	3480	4.6	123
7.0	.5	3.7	29.7	92.3	....	3	Fair	Yes	Yes	No	45	.41	3320	3.8	60
								Yes	Yes	Yes	44	.43	3420	4.0	58
4.0	4.0	5.7	55.2	89.0	....	2	Good	Yes	Yes	No	53	.41	3290	3.5	56
								Yes	Yes	Yes	53	.45	5020	4.6	78
2.0	1.5	5.2	57.9	88.0	71.1	2	Good	Yes	Yes	No	51	.35	5020	3.5	19
								Yes	Yes	Yes	63	.35	3020	3.5	19
2.0	2.0	....	....	....	....	6	Not Run								
1.8	2.0	10.0	83.4	71.0	....	8	Yellow but clean	Yes	Yes	Yes	48	.37	2580	2.4	15
11.8	.5	9.6	50.2	72.2	....	3	Specky	Yes	Yes	Yes	48	.45	3660	4.4	51
								Yes	Yes	Yes	55	.51	4060	4.5	162
4.0	2.0	5.9	66	88.1	....	2	Good	Yes	Yes	Yes	61	.40	3350	3.7	24
3.0	1.3	5.4	67	88.8	....	2	Good	Yes	Yes	Yes	58	.37	3202	4.4	46
4.0	1.2	5.3	65	83.6	....	3	Good	Yes	Yes	Yes	60	.29	2790	3.6	13
								Fair	Yes	Half	63	.43	3230	3.4	182
4.0	1.0	....	....	88.6	....	4	Fair	Yes	Yes	Yes	65	.40	3080	2.9	49
								Yes	No	Yes	66	.44	3140	4.0	273
3.0	.8	11.0	90.7	75.9	....	-	Very* Specky	Yes	No	Yes	42	.38	3100	3.7	42
								Very* Specky	Yes	No	Yes	.40	2930	4.2	65
2.0	1.0	12.1	90.0	72.8	....	-	Very* Specky	Yes	No	Yes	55	.46	2460	5.1	35
								Good	Yes	Yes	73	.36	2460	5.1	35
2.0	1.0	11.3	74.7	74.4	51.1	5	Good	Yes	Yes	Yes	55	.29	2510	3.8	10
3.0	1.0	12.1	67.4	67.6	47.5	8	Yellow but clean	Yes	Yes	Yes	50	.36	2710	4.0	43
							Poor	Yes	Yes	Yes	50	.36	2710	4.0	43
							Fair	Yes	Yes	Yes	47	.41	3480	5.1	65

poor circulation on account of too large a charge of fibre per cubic foot of digester space.

near attention, by the experience of manufacturers of bleached ramation linters. At the completion of the treatment mentioned above two charges of the bleached and washed stock were transferred to an improved hollander type beater of fifty pounds nominal capacity and beaten four and one half hours. During the first



Fig. 5. Cooked Shavings—Bleached and Beaten—Cook C.

hour, the roll was brushing lightly, during the next three hours it was lowered very gradually, and during the last half hour it was brushing hard.

After the beater treatment the stock was dumped into the stuff chest of a 15 inch Fourdrinier paper machine and run into a sheet of waterleaf paper, no color, size or alum, or material other than the stock itself, being used. Representative samples of the papers obtained were seasoned and tested for strength in a constant humidity room at 70° F. and 60 per cent relative humidity.

The pulping and strength data for the various cooks and papers are given in Table I.

Microscopic examination of run A on cotton shavings shows an average fiber length of 3.23 m.m.; run F on cotton linters shows an average fiber length of 5.27 m.m.; while run Q on hull shavings has an average fiber

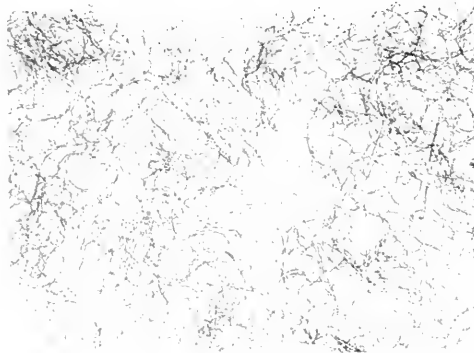


Fig. 6. Cooked Linters—High Pressure—Cook C.

length of 2.06 m.m. The average fiber length of spruce hull pulp is less than 3 m.m., while that of aspen hull pulp is less than 1 m.m. Figures III to VIII inclusive, made under a magnification of 25 diameters, show the typical fiber produced by pulping linters and

shavings under various pulping conditions. Fig. IX represents typical sulphite pulp fibers. Fig. X shows typical aspen soda pulp fibers. Both Fig. IX and X were photographed in the same manner as the linters and shavings, and under the same magnification of 25 diameters. No photomicrographs of the hull fiber runs are included since little, if any, difference in appearance to that of shavings was apparent.

Cooks A, B, and C, were made in a stationary digester using both direct steam and indirect jacket steam. During the pulping period circulation of the liquor was obtained by means of a centrifugal pump. This treatment gave an evenly cooked pulp. In the cooking of linters, however, considerable difficulty was experienced in the blowing of the pulped linters since the circulation of the cooking liquor by means of the centrifugal pump apparently felted the linters into a compact mass. All of the other cooks with the exception of cooks 2 and 3 were made in a rotating digester supplied with direct and indirect steam. No difficulty was experienced in blowing these cooks.

From a study of the pulping data and with the reservation that the data represent only the results from semi-commercial trials, the following conclusions may be drawn:

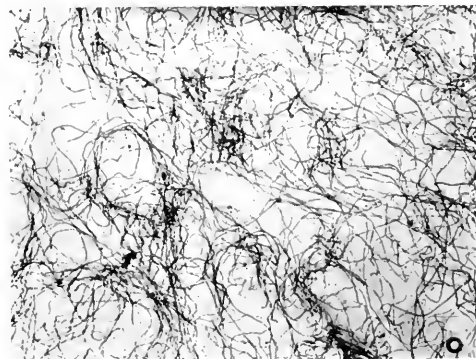


Fig. 7. Cooked Linters—Low Pressure—Cook E.

The quality of the pulp produced and the ease of bleaching make second cut cotton linters, shavings and hull fiber extremely interesting as a possible source of pulp for the higher grades of paper. An ideal book stock could be prepared by pulping the second cut linters, shavings or hull fiber separately, or if desired, by combining them in any desired proportion by first passing them through a suitable duster and then blowing the mixture to the digesters and pulping the mixture under the proper conditions. By proper beater treatment high grade writing, book, blotting, tissue and other stocks can be produced.

From the experimental data we can see no reason why a high grade stock cannot be produced from second cotton cut linters, shavings and hull fiber. Whether or not the raw linters and shavings can be produced at a price to compete with wool for the manufacture of sulphite and soda pulps must be ascertained by further cooperation with the producers.

1. Cotton shavings similar to the shipment received by the laboratory can be successfully pulped by the soda process, yielding a high quality of pulp. For 100 lbs. of bone dry shavings using a maximum digester pressure of 100 lbs. and using 12 lbs. of caustic soda, the pulping operation will be completed in a total



digester period of 4 hours. The yield of bone dry pulp will be 70 per cent and the bleach consumption to bring the pulp to a good white color will not exceed 4 per cent, calculated as bleaching powder with 35 per cent available chlorine. The pulp loses considerable fiber by washing with the drum washer in the beater, so that the yield of paper from the raw shavings showed a final figure of 55 per cent., based on bone dry shavings.

2. Cotton linters of the grade shipped to the Laboratory will require 9 lbs. of caustic soda per 100 lbs. of bone dry cotton at 100 lbs. digester pressure, with a total time of cook of 4 hours, giving a yield of 90 per cent of bone dry pulp. This pulp can be bleached to a high degree of white consuming not more than 2 per cent of bleaching powder, calculated as 35 per cent available chlorine. The washing losses, bleach losses, etc., will reduce the yield of finished paper as collected on the reel of the paper machine, to 70 per cent, based on the bone dry weight of the original raw linters.

3. Hull fiber of the grade furnished the Laboratory can be successfully pulped with 18 pounds of caustic soda or a total of 15 pounds of caustic soda

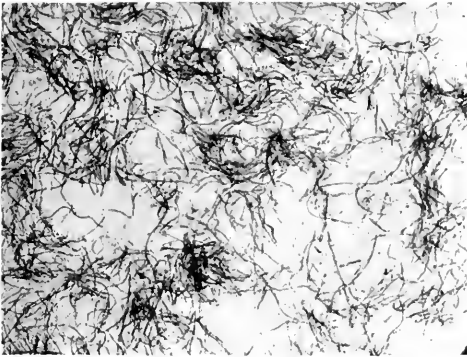


Fig. 8. Cooked Linters—Bleached and beaten—Cook E.

and sodium sulphide per 100 pounds of bone dry material with a steam pressure of 90 pounds in from 3 to 4 hours, giving a yield of from 65 to 75 per cent. of bone dry pulp. This pulp can be bleached with from 5 to 8 per cent of standard bleaching powder and the washing and bleaching losses are such that a production of from 47 to 51 per cent of finished paper on the reel may be obtained, the yield being based on the original weight of the raw hull fiber.

Cooks N, 2 and 3 were made on a shipment of linters received from St. Louis and were from a different source than the Government linters on which the majority of the pulping trials were made.

Cook K was made with 31 lbs. of sodium carbonate per 100 lbs. of bone dry linters. With a high digester pressure of 100 lbs. and a pulping time of 4 hours the resulting pulp showed numerous specks from the undigested hulls, clearly indicating that a more drastic pulping agent was required.

Cooks L, M, N and Q were made by the sulphate process which gave a high yield of high quality pulp with a saving of from ten to seventeen per cent. of alkali, in comparison with the soda cooks made under similar cooking conditions. The greater the amount of

non-fibrous, non-cellulose material that must be removed the greater the advantage of the sulphate process as is manifest in cooks Q and R on hull fiber. Both were cooked at the same steam pressure with the same sized charge of 11 pounds of material per cubic foot of material and the total time of cook was 3 hours,

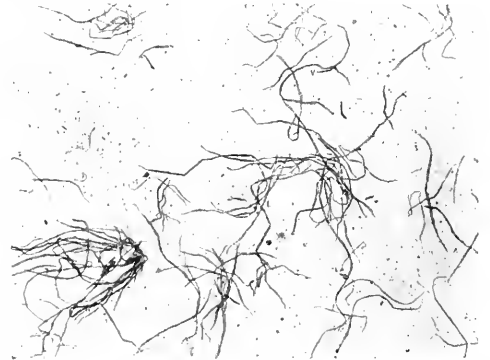


Fig. 9. Spruce Sulphite Pulp.

while in cook R the soda cook, the alkali charge was 18 pounds per 100 pounds of material and the total time of cooking, 4 hours. As would be expected, a larger yield of pulp was obtained under the milder cooking conditions of the sulphate cook, the yield being 74.4 per cent against 67.6 per cent. with the soda cook. Notwithstanding this, the bleach necessary with the sulphate cook to produce a standard white was 5 per cent against 8 per cent for the soda cook. It, therefore, seems evident that the sulphate process is capable of removing the foreign non-cellulose matter more rapidly with less attack on the cellulose than the soda process and that the fiber obtained can be bleached to a standard color with a lower consumption of bleaching powder.

The main difficulty experienced in all the pulping trials was the complete removal of the hull fragments by digestion without injuring or destroying the fiber.



Fig. 10. Poplar Soda Pulp.

The chemical consumed during the pulping of shavings and hull fiber is mainly required for the reduction of the hull fragments. No duster was available at the Laboratory but the writers are convinced that by passing the raw fiber through a proper duster that a

of the mill fragments could be made by making possible reduction of the severity of the cooking conditions and saving in chemical and time. Another difficulty easily avoided was the danger of chlorine, which is a by-product of the fiber, is the danger of chlorine too much material per cubic foot of digester space to permit free circulation of the cooking liquor and consequently an even digestion of the fiber. With the material used, 11 pounds bone dry weight of fiber per cubic foot of digester space, was found to be the maximum that could be safely used. A liquor volume of at least 52 gallons per 100 pounds of material was also found necessary to insure sufficient liquor for circulation.

For comparative purposes, two paper machine runs were made on bleached linters prepared at the Government plant at Nitro, West Virginia, for the manufacture of smokeless powder. We understand that the following conditions were used at Nitro in the purification of this material:

Raw material . . . . .	75% linters, 25% lull fiber.
Caustic soda . . . . .	21 lbs. per 100 lbs. raw material.
Concentration in digester . . . . .	26-27 g.p. 1 NaOH
Volume of liquor . . . . .	95 gallons per 100 lbs. raw material.
Steam pressure . . . . .	72 lbs. per square inch.
Time coming up to pressure . . . . .	1½ hours.
Time at pressure . . . . .	2 hours.
Bleaching powder used . . . . .	2½ pounds per 100 lbs. pulp.
Yield purified cotton . . . . .	75% of weight raw material.

This material has been given a much more severe treatment than the typical runs on similar material in this series of experiments, especially in the amount of caustic soda used; half of which must have been present in the black liquor in the free state. For paper making purposes, a much less severe treatment is necessary.

One machine run was made on the material as received and a cream colored sheet was obtained similar in strength and other properties to the other runs of this series, but contaminated by too many dirt specks to pass for a high grade quality of book paper. The material for the other machine run was bleached with 1 per cent of bleaching powder and washed with a drum washer. The paper obtained was considerably improved but still too dirty for a high grade of book paper.

#### THE PRESERVATION OF PAPERMAKERS' FELTS AND JACKETS.

In consequence of the scarcity of wool in the United States, the following ever useful recommendations were made last fall to American paper manufacturers by the Pulp and Paper, Conservation, and Felt Section of the War Industries Board with a view to the preservation of felts and jackets:—

1. Watch your stock carefully. Keep it in a cool, absolutely dry place—moisture causes mildew and deterioration of wool fibre. Felts and jackets should, if possible, be kept in the original papers tied tightly. See that there are no holes in the wrapping papers. Keep them clean. Dirt injures them and attracts moths. Wash your whole felt room clean and in good order. Use moth preventives freely and frequently. Clean your paper is good—cover your shelves with

flake naphthaline is the best preventive. It evaporates, however, and must be renewed. Sprinkle felts thoroughly and scatter it around the felt room. Examine your stock at least once a month for traces of moths or other injury.

3. Handle your felts with care in taking them to the machine. Felts are bulky and heavy and may be torn by catching on a nail or anything sharp. Put them down only in clean places. Clean all journals and bearings before putting felts on, so as to keep them free from grease.

4. The life of a felt depends, above everything else, on the conditions of the machine. See that all press rolls are turned up with proper crown to assure very best running conditions. Press or felt rolls in bad condition, rough suction box covers and whippers, badly made spread rolls, often reduce service 50 or even 75 per cent.

5. See that every roll turns freely. Cylinder bearings should be watched carefully. All felts are subject to great strain lengthwise, cylinder felts especially. Don't stretch your felts too tight. A large percentage of felts are ruined by running under absolutely unnecessary strain.

6. Hot water is detrimental to felts. Warm water injures them and causes them to stretch. Use the coldest supply available.

7. Felts on idle machines deteriorate almost as fast as when running. In shutting down, raise felts from all rolls. See that they do not come in contact with iron and that the air can reach them at every point, so they can dry quickly and thus prevent mildew. Be careful in starting up to see that all rolls turn easily and everything is in good order.

8. Use care in handling jackets. They are tough and strong, but that is no reason for rough treatment. Be careful in stretching, shrinking and tying down. Watch the conditions of your guard boards, and, above all, don't set guard boards down tighter than necessary.

9. Don't take felts off before they are worn out. Get every day's wear possible out of them, even at some risk of a shut down during the week—wool must be saved. Superintendents and foremen should examine felts on machines carefully before allowing them to be taken off and new ones given out. Remember, in the fall, blankets are in demand. Don't make them from felts that can be run longer. By this one means alone some mills have increased the life of their felts by weeks.

10. Wash and dry your used felts carefully and keep them as clean as you can. Their value depends on their condition. Don't destroy even small pieces of worn out felts, every pound can be used for some purpose. Don't keep them. Sell them at once; they are needed now.

#### GUY TOOMBS HONORED.

Mr. Guy Toombs, who recently left the service of the Canadian Northern, to join the Canadian Export Paper Co., and who, on leaving, was presented by his staff with a cut glass punch set, complete with tray, also with a gold signet ring, bearing the inscription: "From the ladies of the Canadian Northern Railway," was further honored last week by the presentation of a gold watch with gold and platinum chain, from officials of the Ontario & Quebec divisions of the Canadian National Railways—the Canadian Northern being merged under that title now.

### LICENSING FEATURE OF THE DYES TARIFF BILL.

This bill was reported out of Ways and Means Committee to the 66th Congress on August 1, 1919, and is known as the Longworth Bill, or H. R. 8078.—To regulate the importation of coal-tar products, to promote the establishment of the manufacture thereof in the United States, and, as incident thereto, to amend the Act of September 8, 1916, entitled "An Act to increase the revenue, and for other purposes."

It has such an important bearing on the procurability of colors for paper making that pertinent abstracts from the Bill are granted:—

"Sec. 503 (a.) During the period of two years after the date of the approval of this Act it shall be unlawful for any person or persons or corporation to import or bring into the United States, or any of its possessions, except under license previously obtained from the Dye Licensing Commission hereinafter created, any of the products enumerated in section 500 of this Act, or any product derived directly or indirectly from coal-tar, including crude products and intermediate products, as well as dyestuffs, medicinals, and other finished products, and including mixtures and compounds of such products and other products.

Sec. 503 (b.) A commission is hereby created to be known as the Dye Licensing Commission, which shall be composed of eleven commissioners. The said commissioners shall be designated as follows:

"One by the National Association of Wool Manufacturers.

"One by the American Association of Woolen and Worsted Manufacturers.

"One by the National Council of American Cotton Manufacturers.

"One by the National Association of Finishers of Cotton Fabrics.

"One by the Silk Association of America.

"One by the American Paper and Pulp Association.

"Three by the American Dyes Institute.

"One by the American Drug Manufacturers' Association.

"Sec. 503 (c.) The said Dye Licensing Commission shall issue licenses to import for use in domestic manufacture such of the products covered by section 503 (a) of this Act, and such products only, as may be unobtainable from domestic sources on reasonable terms as to price, quality, and delivery. The commission shall limit the issue of licenses to import any product as nearly as may be to the quantities required by the actual current needs of the consuming industries in the United States, having regard to the necessities of such industries as are unable to determine beforehand their requirements. Nothing herein contained shall authorize the commission to refuse a license to a manufacturer, person, or agent to import for actual use by the manufacturer a foreign dye when such domestic dye of equal quality is not immediately available for his use.

"Sec. 503 (f.) Any person subject to the jurisdiction of the United States who shall, either as principal or as accessory, import or attempt to import or aid in importing any product described in section 503 (a) of this Act without license as therein provided shall be fined not exceeding \$5,000 or the value of such product at the time of importation, whichever shall be greater, or shall be imprisoned for not more than one year, or both."

The following are excerpts from the report of the

Ways and Means Committee on the Longworth Bill, from the Congressional Record, Friday, August 1, 1919.

#### Importation of Coal-Tar Products.

"The plan as provided in this bill is to form a licensing commission, its members to be designated by associations engaged in and representative of both the producing and consuming industries. This commission will have power to grant licenses for the importation of foreign dyes under certain conditions. It is positively commanded to grant licenses to any applicant to import any foreign dye which is not obtainable in this country from domestic sources, and any dye, which, while made in this country, is not obtainable at a reasonable price, of good quality, and within a reasonable time. Thus absolute assurance is given any American consumer of dyes that he can at any time obtain the foreign product where the American industry is unable to supply on favorable terms. Conversely, it will absolutely exclude transportation of dyes which are made in this country of satisfactory quality and at fair prices, and insure the development and extension of the manufacture of those dyes. Furthermore, the applications for the importation of such dyes as are not made here will promptly stimulate our manufacturers to make the same dyes by showing that a strong demand exists for them and will thus guide the industry into the development which is really required.

"During the life of this system a substantial number of dyes not made in this country will no doubt be imported, and as they will be subject to the rates of duty provided in this bill will produce a very substantial revenue for the Government.

"Your committee does not suggest a license system as a permanent governmental policy, but feels that nothing else can meet the present emergency. Accordingly your committee recommends the license plan, together with an increased tariff, because as soon as the peace treaty is ratified the new American dye industry will be exposed to competition from an adversary so powerful and so desperate that no practical rate of duty can offer any real defense.

"Great Britain, France, and Japan have protected their own Government-aided dye industries by license laws essentially similar to the one herein recommended. The market of the United States is therefore, except that of China, Germany's last opening. To penetrate it and destroy our domestic producers the trust will surely be glad to spend millions of its surplus. Not many millions would be needed. A very few, adroitly used in practically giving away selected dyes, would kill the business of even the strongest of our companies and leave us once more at the trust's mercy.

"No antidumping law yet suggested seems at all likely to meet the conditions in this particular industry, on account of its immense complexity and the ease with which imports can be camouflaged by the skilled and unscrupulous German chemist. It is apparent, then, that any tariff bill which could possibly become law might and indeed probably would fail to insure the development of this industry which is so essential to our national defense and well-being. It is equally clear that the proposed license plan, faithfully administered, will certainly furnish the necessary protection, and that, too, without sacrificing revenue. Your committee believes that the industry is too important to be risked, and therefore recommends the adoption of this certain though unusual means of de-

“Your committee makes this recommendation also as the only suitable answer to the similar British, French and Japanese license laws. These laws keep the competition of our dyes out of Great Britain, France, and Japan. Your committee does not believe that we should aid in building up their new subsidized industries by giving them at the expense of our producers unlimited access to our market. When by this simple expedient we can at the same time make sure of obtaining every foreign product we need and of building up our own vitally important industry, we feel that Congress ought not to hesitate or rest content with any doubtful remedy.”

So it appears that Canada has the privilege of buying dyestuffs in any of several countries, in all of which their manufacture is protected by tariff.

### STOCKS OF PAPER DECREASED IN JULY.

Stocks in the United States of newsprint and specialties increased during the month, according to the Federal Trade Commission. Stocks of all other grades decreased. Mill stocks of all grades showed a net decrease during July of 17,767 tons. Stocks of all grades reported by manufacturers at the end of July amounted to 266,072 tons including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stock aggregating 155,487 tons.

#### Ratio of Stocks to Average Production.

Comparing the stocks on hand at the domestic mills on July 31st with their average daily production based upon the weekly and monthly reports for the 12 months' period ended March 31, 1919, the figures show that:

- Newsprint mill stocks equal slightly less than 7 days average output.
- Book paper mill stocks equal slightly more than 12 days average output.
- Paperboard mill stocks equal slightly more than 9 days average output.
- Wrapping paper mill stocks equal slightly more than 24 days average output.
- Bag paper mill stocks equal slightly less than 8 days average output.
- Fine paper mill stocks equal slightly less than 32 days average output.
- Tissue paper mill stocks equal slightly more than 19 days average output.
- Hanging paper mill stocks equal slightly less than 25 days average output.
- Felts and building paper mill stocks equal slightly less than 11 days average output.
- Miscellaneous paper mill stocks equal slightly more than 28 days average output.
- Total paper mill stocks of all grades equal slightly more than 13 days average output, and decreased nearly 18,000 tons during July.
- Total loss of time in machine hours was 118,441 in July, compared with 124,167 in June.

### SAYS SHORTAGE OF PULP EXISTS.

The pulp market shows much improvement, the latest bulletin of the Norwegian-American Chamber of Commerce, New York, says, which follows in part: Papers of all grades are in better demand and paper mills which, heretofore, have been running from 50

to 60 per cent of capacity, are now running full production with a consequent increased demand for raw material.

The adjustment of stocks to the stagnant conditions of the paper trade has resulted in a shortage of pulps of all kinds. This has been particularly noticeable in kraft pulp and bleached sulphite, the greatest activity in the paper market being apparent in kraft papers and the higher grades of bond and writing papers, in which bleached sulphite is used. These grades were the most depressed and, in consequence thereof, have recovered more sharply than other grades.

Scandinavian mills report a good demand for their stocks and productions from England and the European Continent and the revival of manufacturing there, would seem to indicate that the Scandinavian manufacturers will not be obliged to dump their surplus stocks on the American market at low prices.

### LIVE TOPICS ON PROGRAM OF ILLINOIS MANUFACTURERS' ASSOCIATION.

The vital problems of business, multiplied by post-war and industrial developments, will be discussed at a national conference to be held in Chicago, September 8 and 9, under the auspices of the Illinois Manufacturers' Association. The sessions will be at the Congress Hotel.

Trade and industrial associations in every line have been invited to appoint delegates, and to participate in what is believed will be a meeting of moment, inasmuch as it will enable business to present concretely its attitude on some of the questions now before the law-makers at Washington, and some of the proposals of a revolutionary nature that have been presented from various sources in the past few months.

Representation is to be given at the conference not only to business, but to the farming interests, since it is pointed out that agriculture, after all, is one of the greatest businesses of the country. The farmer has his capital invested in land, he is an employer of labor and he is concerned with the maintenance of conditions which will permit him to obtain a fair return upon his investment and his management of his enterprise.

Leaders of organized labor have also been invited to talk, and to state where the demands of workers are going to stop.

Some of the subjects which it has been suggested be discussed at the conference are the following:

Participation in private business on the part of the Federal government.

Nationalization of industry.

Influence of exports on prices and production.

Possibilities of increasing production.

The relation of the United States to the rehabilitation of industry in Europe.

Stabilization and guarantee of contracts.

Definition of profiteering.

The attitude of employing farmers and manufacturers to labor.

Adjustment between property rights and community interests.

Participation of labor in the management of industry.

Increasing the purchasing power of the dollar.

Distribution of the war debt.

Governmental price fixing.

The Plumb plan.

The solidarity of farming and business interests.

## British Columbia Making Good

By J. C. ROSS.

The war is responsible for the new lease on life which has come to British Columbia. When the Allied Governments found that they had to build fleets of aeroplanes to beat back the Hun invaders they searched everywhere for suitable timber for the making of aeroplane wings, eventually deciding upon British Columbia fir and spruce as being the best in the world. The result of this discovery was an immense demand for aeroplane lumber. However, side by side with this development went that of shipbuilding. In truth, British Columbia has taken off her coat, rolled up her sleeves and "waded in" to make good through the development of her natural resources. Shipbuilding which was unknown on the coast a few years ago is to-day one of the largest and most important industries in the province. The lumbering industry which languished for long years is booming as at no time in its previous history, the output last year being valued at over \$54,000,000. Fishing has received a new impetus while farming and mining have also taken on new leases of life. The pulp and paper industry is also in a flourishing condition; the Pacific Mills at Ocean Falls are brimming with activity, the Whalen Company have just secured additional capital and are preparing to do bigger and better things than at any time in its history and the same is true of other pulp and paper projects on the coast.

The forest resources of British Columbia are almost unlimited. As stated above last year fifty-four million dollars worth of lumber was manufactured in the province as compared with \$48,000,000 the previous year, and \$29,000,000 three years ago. The Hon. T. P. Pattullo, Minister of Lands, estimates that the coast lumber mills have a yearly capacity of two and a half billion feet, but points out at the same time that B. C. has three hundred and sixty-five billion feet of lumber and that the annual growth is far in excess of the annual consumption. Even making allowances for an increased use of lumber and pulpwood the Minister states that "B. C. has sufficient timber for two hundred years."

There was a time, not so many years ago, when B. C. in company with many other parts of the Dominion was engaged in exploiting her resources. A generous, but foolish Government, gave away to railroad promoters, land speculators and Big Interests generally, vast portions of the people's heritage, farm lands, timber areas, mining rights, etc., were handed out on a silver platter to the friends of the Government. The result was a period of exploitation and wild speculation which did much to discourage and hinder legitimate development. Then came the defeat of the Government, the pricking of their "South Sea Bubble" and the outbreak of hostilities, the net result being that the people of the province set themselves seriously to work to rectify the wrongs and to get down to a real sane, economic basis. To their everlasting credit it must be said that they have succeeded to a remarkable degree. Production and more production is the keynote of the whole of the province's activities. To-day there is a whole-hearted desire on the part of the Government, the press and other leaders to develop the natural resources along proper channels, and nowhere is it more evident than in the industries associated with the forests of the province. In lumber-

ing they are exporting the products of their forests to China, Japan, Australia, New Zealand and the United States while they still continue to send immense quantities to the treeless prairies. To a large extent the same is true of the various lines of paper manufactured on the coast. At Ocean Falls one sees immense quantities of paper being loaded on the boats for trans-shipment at Prince Rupert or Vancouver to Edmonton, Winnipeg and all prairie points, while a large export business is also carried on with neighboring and distant countries.

Indeed, it is almost impossible to imagine the wonderful possibilities confronting the Pacific province. B. C. faces an awakened Orient with hundreds of millions of people being educated to demand our goods. She is in the path of the world's great highway between Europe and the Orient and she cannot help but take toll of the commerce which passes to-and-fro, and at the same time develop her great basic industries. The province has a wonderful future ahead of it and the people have the courage and confidence necessary to bring about a successful culmination to their highest dreams.

Note: Mr. Ross was editor of the Pulp and Paper Magazine for nearly a year and "Kept the home fires burning" last summer while the Editor went west. The comments of Mr. Ross are the more interesting as he covered much the same ground seven years ago, at the time there were about half the number of mills on the coast as at present.—Ed.

### EXPECT IMPROVEMENT IN SHIPPING TO ENGLAND.

Great Britain is showing interest in the increasing of imports of Canadian pulp and paper and is prepared to meet Canadian dealers more than half way, according to advices received from A. L. Dawe, secretary in connection with the Canadian Trade Mission.

#### Wants More Cargo Space.

Sir George Riddell, chairman of the news-paper conference, representing the London and Provincial Press, is fully cognizant of the fact that transportation facilities are at present very unsatisfactory and he realizes that it is desirable that Canadian pulp should be used by British paper makers in preference to Scandinavian pulp and as it is necessary to supplement the amount of paper which is being manufactured in Great Britain, that the Government should attempt to provide the necessary transportation from Canada.

#### Expect Shipping Improvement.

He has brought this matter to the attention of Sir Joseph Maclay, of the Ministry of Shipping, who states that the ministry is willing to do all in its power to facilitate the importation of goods from Canadian sources. Tonnage rates will be a drawback for some time, but otherwise an improvement in shipping conditions may be expected.

### TO INVESTIGATE NEWSPRINT.

Washington, Aug. 26. — Investigation of the print paper situation will be conducted by a sub-committee of the Senate Manufactures Committee, with Senator LaFollette, of Wisconsin, as chairman, it was decided to-day. Chairman LaFollette announced that the committee first would devote its attention to the examination of information secured by the Federal Trade Commission, after which hearings would be held.

Is this an investigation of the situation or of the inquiry?—Ed.

### PRICE OF NEWSPRINT OR GOOSEBERRIES— WHICH?

It was announced some time ago in a paragraph, which went the rounds of the press, that, according to the figures published by a well known newspaper directory, nine daily papers in Canada had gone out of existence during the past year. The charge was made that the stoppage of these was due to the high price of newsprint. Most of the newspapers inserting the item took occasion to take a whack at the newsprint manufacturers, crediting them with a desire to put the publishers out of business.

Edward Beek, acting secretary of the Canadian Pulp and Paper Association, in a recent article on "Newspaper Mortality and the Price of Newsprint," which is published in the current issue of "Marketing," answers the charge in no unequivocal terms and points out some interesting and timely facts. He goes on to state that it is absurd to charge the manufacturers with a desire to kill the newspapers as, without them, there would be no newsprint manufactured. Mr. Beek affirms that in every case where there has been a suspension of a daily paper, or an amalgamation with another, it has been because local conditions did not warrant the existence of two or more daily journals, some of which were published in close proximity to cities with large dailies which reached the smaller centres a few hours after being issued. For instance, there was a daily published in Nelson, B.C., and Mr. Beek declares that it is a venturesome publisher who would undertake a daily in such a limited field as a town of 3,000 inhabitants, no matter what the price of newsprint.

Mr. Beek adds:—So figuring it all out, it is seen that the combined circulation of all the daily papers of Canada that went out of business during the year and allowing nothing for the increased circulation made possible thereby of those remaining, amounted to but 21,391 copies all told. Allowing that each of the suspended newspapers when alive, published a 14-page paper every day (a generous allowance because all but one of them were 8-page papers) the combined circulation rendered into terms of newsprint would mean about 5,000 pounds, or two and half tons of paper a day. Newsprint sold around \$40 a ton in 1914, so that the daily paper bill for all the suspended newspapers combined would have amounted to but \$100 a day, at that time. Since 1914 paper has sold at from \$42 to \$69 per ton. Allowing that the newspapers in question were obliged to pay the maximum price of \$69 for their newsprint, their total outlay on that account would amount to \$172.50 a day, or exactly \$72.50 a day more than they were paying before the price was increased. Pro-rated among the six defunct newspapers this would be an additional charge to each of them of approximately \$12 per day, which represents the difference between existence and non-existence of these newspapers to those who hold the theory that they were crowded to the wall by the excessive price of paper!

The theory is absurd, of course, as every intelligent newspaper man in Canada is aware. Newspapers in Canada fail when they do fail, for reasons quite apart from the price of newsprint paper, which in reality affects them but little. They fail because they are published in communities insufficient in size to give them adequate support. They fail because their fields are already overcrowded. They fail because their publishers are lacking in business acumen. They fail because they do not apply an essential need to the communities they are supposed to serve.

The manufacturers of newsprint paper certainly should not be accused of killing all the daily newspapers. Their own business depends upon keeping the newspapers alive and creating more of them. If the truth were known many a struggling daily newspaper in Canada today would have gone under long ago, had it not been for the credit extended to it and the tolerance of the concern from whom it obtains its newsprint.

Furthermore, a reference to the directories shows that while a few small and unimportant dailies stopped publishing in the period under review, most of the remaining newspapers enjoyed greater prosperity, as is evidenced by increased circulation at an advanced price and by increased advertising patronage at higher rates. It shows that the number of weekly publications increased from 1013 to 1073, the bi-weeklies from 8 to 11, and that the total number of periodicals of all descriptions had advanced from 1,490 in 1913 to 1,552 in 1919, or a net gain of 62, which is clear proof that the price of paper is not and never has been ruinous to the publishing industry of Canada.

Some of the newspapers are much given to decrying their own business which is neither a dignified nor a becoming proceeding. It inspires neither confidence nor respect. If a newspaper is published on a business basis and conducted by sound methods there is no reason why its affairs should be any more hazardous than those of any other commercial enterprise. It is only when publishers come to regard themselves as a cross between an eleemosynary institution and a public benevolence and ask for support on other than strictly business grounds that they claim considerations not accorded according to other businesses.

As a matter of fact the touting of their poverty by a large section of the newspaper press does not accord with the known facts. There have been fewer newspaper failures in Canada during the past ten years than in any other line of comparable commercial business. And finally the price of newsprint has had about as much to do with such failures as has the price of gooseberries.

### WOMAN DROWNED WHEN PULPWOOD SANK.

Quebec, Aug. 22.—The American barge, Capt. Dunn, from the Great Lakes, sank here this morning off the breakwater. She had come up from points below the river with pulpwood, a half hour before, and collided with the Pointe a Darcy wharf, immediately springing a leak. The crew sped her toward the Beaupre flats to beach her, but she sank on the way. All the crew were saved by a dredge working nearby, except the cook, a woman, who was drowned.

### UNCERTAINTY SURROUNDS PROPOSAL.

A certain amount of conjecture still surrounds the proposal launched by J. J. Carriek and associates for the erection of a pulp and paper mill at Port Arthur, says a Fort William despatch. The name of the American interest supposed to be behind the concern has so far not been given publicly. In this connection it has for some time been understood that Mr. Carriek disposed of the Pie River limits to certain American interests for the Canadian interests which he represented, presumably Mackenzie and Mann.

Mr. and Mrs. J. H. A. Acer and Miss Acer, Pine avenue west, have returned from an extended trip to the Coast.

# BRITISH TRADE NEWS

**Labor Situation Easier—Norwegian Prices in London  
—British Mills and Foreign Trade—Cigarette  
Paper—Big Jump in Imports.**

London, August 15, 1919.

Apprehensions arising from the labor disputes in the United Kingdom are, for the moment, set aside. This week the Triple Alliance had a special conference and it was decided to drop the policy of "direct action"—that is call out all transport workers, railroad men, miners, and industrial workers. History teaches us that after war we have an industrial war, and it is a good thing for the British mill-owners that the coal and transport disputes have fizzled out as they have done. To give an idea what a coal strike means here, according to Parliamentary returns it requires 2,000,000 tons of coal in a year to run the paper mills. A strike, consequently, is a serious matter in paper production. There still remains the great question of railroad facilities, which Canadian pulp men should not lose sight of. Deliveries are not prompt and there is a scarcity of labor and rolling stock, so much that paper and pulp are often weeks behind the allotted time for delivery to the consumer.

Business this week is rather dull owing to the holidays and the recent industrial troubles. There is a general tendency all round to raise prices owing to increased cost of manufacturing. Norwegian mills, I am told, have increased the prices of pulps and papers and this was fully anticipated as matters are not the best with them. Orders for sulphite, and in many cases papers, are being refused on the ground that shipment cannot be undertaken before the end of the year. Sulphite (M. G. pure) is up to £65 a ton f.o.b., and heavier substances up to £44 f.o.b. Scandinavian ports. Moist mechanical pulp is also advanced slightly. Anyone who studies the Norwegian market will remember that about this time of the year the Norwegians are inclined to run up prices. Sometimes it is a good move to shake the market up; but I am afraid in the present instances the pulp and paper mills are compelled to seek a higher revenue owing to the many difficulties they are faced with.

Great attention is at present being given here to oversea trade and Canada is picked out as a market for likely business. In a great many cases the managers of mills are devoting attention to producing papers which the Germans and others had a monopoly in. The idea is that when the German, or whoever it may be, when the import restrictions are fully lifted, bring into the market a specific paper the British manufacturer will be able to say to the consumer: "This is my product and it is equally as good and better in fact—and British made." These foreign papers are being closely watched, just as much as the Scandinavians are watching Canadian pulps in England to-day.

The Trade Board returns for July were issued at the beginning of this week and a considerable increase is notable in the imports. Particulars are not given about Canada, until trade fully recovers itself. At a glance the figures are in tons:—

	July.	Jan'y-July.
Chemical pulps . . . . .	45,653	180,943
Mechanical pulps . . . . .	65,182	279,184
Esparto . . . . .	10,325	39,284

It will be seen from these records that July showed

the first sign of trade reviving. Moist mechanical pulp was imported as under July and January to July respectively:—

	July.	Jan'y-July.
	Tons.	Tons.
Sweden . . . . .	23,112	50,795
Norway . . . . .	33,515	183,997
Canada . . . . .	6,770	12,440
Other Countries . . . . .	.....	4,009

This makes a total of 63,397 tons of moist received in July and 251,331 tons between January and July.

The imports of paper show that Newfoundland is a long way ahead of other countries in supplying the British market with reeled paper. The tonnage in July and January-July was as follows:—

	July.	Jan'y-July.
	Cwts.	Cwts.
Sweden . . . . .	17,032	156,144
Norway . . . . .	37,082	120,293
U. S. A. . . . .	1,689	21,320
Newfoundland . . . . .	74,580	199,860

The total amount of paper for printing purposes imported reached 238,439 cwts in July alone. This does not include other papers such as coated paper hangings, etc. Millboard and woodpulp board imports were 71,825 cwts. in July and 390,268 cwts. for January to July. Taking things all round there is a remarkable jump in the imports of papers and pulps.

The consumption of cigarette paper in the United Kingdom is extensive and the best makes emanate from France. A new company has been registered here with a nominal capital of £120,000 to take over the business of the manufacture of cigarette papers at Stubbins works, near Manchester. The company will be known as Cromptons (Stubbins), Ltd., and it is a private concern. There is a splendid opening for good cigarette paper and the trade France enjoyed was excellent. Unfortunately some of the French cigarette paper mills suffered during the war (and with import restrictions) it will be sometime before they can take their place again, same as they occupied prior to 1914, in the British market.

The exports of paper, boards, cards, etc., from the British mills during July and January-July, were as follows:—

July.	January-July.
78,808 cwts. . . . .	425,630 cwts.

Of the exports, the following were sent to Canada: 6 cwts. of writing paper (compared with 12 in July, 1918, and 67 cwts. in 1917), 25 cwt. of printing paper, as against 78 cwts. and 248 cwts. for the corresponding periods. There is a growing tendency in the export trade.

Paper Tube makers at Castletin, Lanes., have struck work for a 30 per cent increase of wages.

There is a good market in the United Kingdom for a good quality of photographic paper. Complaints are made in London that the paper now in use in most cases only lasts four or five years and the difficulty is to keep records.

A soldier tells me that when the Germans retired from Pontnielt, near Bellecourt, he entered a dug-out and found a volume marked containing a descriptive account (and pictures) of esparto grass for paper-making. There were voluminous observation marks and figures, evidently the work of a paper-maker. The finder was also interested in paper-making—a curious coincidence.



## Technical Section



### NEW MEMBER.

The Pulp and Paper Magazine and others are glad to welcome Mr. Ross Campbell, American Writing Paper Co., Holyoke, Mass., to membership in the Technical Section.

### CUPID SUCCESSFUL AT F. P. L.

The marriage of Miss Eva M. C. Smith, eldest daughter of the late S. Smith, of Westmount, and of Mrs. Smith, to Horace N. Lee, M.A., youngest son of Mr. and Mrs. E. E. Lee, of Boston, is taking place quietly in St. Matthias Church, Westmount, early in September. Mr. Lee was connected with the Forest Products Laboratories in Montreal for several years. So was Miss Smith. Propinquity and Cupid did the rest. Our best wishes to them for a happy future.

### PROGRESS IN THE PREPARATION OF THE TEXT-BOOKS ON PAPER MAKING.

R. S. Kellogg, Secretary of the Joint Executive Committee on Vocational Education writes, under date of August 25: Since the Progress Report issued on July 15, 1919, Editor J. N. Stephenson has received outlines of the sections on Physics; Mechanics and Hydraulics; Electricity & Magnetism; Bleaching of Pulp; Finishing Operations; Paper Machines; Tub Sizing of Papers; Treatment of Rag and other Fibres; Manufacture of Sulphite Pulp.

Preliminary copy of a portion of the manuscript on Paper Machines has been received and examined, two installments of the manuscript on Manufacture of Soda Pulp have been received, one of them has been examined by the Editor and one critic and passed on to another. The manuscript of the section on Beating is in the Editor's hands as well as the finished manuscript for the section on Arithmetic and Mathematical Applications.

Work is progressing on the sections referred to as well as on a number of others so that the preparation of the text is going forward as well as can be expected.

### CONTINENT-WIDE INTEREST IN TEXTBOOKS.

Mr. R. S. Kellogg, secretary of the Joint Executive Committee on Vocational Education, has sent to the Pulp and Paper Magazine the following extracts from two of the many letters he receives. These show that interest in the textbooks under preparation by the committee stretches from sea to sea. Progress is being made but patience will be found a convenient virtue.

#### From Floriston, California.

"I am informed by the Editor of Paper Trade Journal that you are secretary of a committee preparing Vocational works of the Paper Industry. I am working in a paper mill and trying to learn the business in a thorough and practical manner. Therefore, if you have any information that would be of value to a student I would be more than pleased to hear from you."

#### From Boston, Mass.

"While reading 'Paper' my attention was called to an article entitled 'Skill and knowledge,' in which was outlined a plan to enable paper makers to attain a comprehensive knowledge of the fine points in

paper-making, by a correspondence course. Although at present employed as a Post Office clerk, I am nevertheless interested in paper-making. In fact, I was backtending before I was sworn into the Civil Service, but on account of rheumatism was forced to resign, but am in good physical condition at the present time.

"Would you please communicate any information you may have on the foregoing subject."

"Please receive my appreciation for any inconvenience this may cause you."

### REVIEW OF RECENT LITERATURE

**A.14—Qualities and tests of paper (as regards durability).** (Qualité et essais des papiers.) Papyrophile. La papeterie, 41, p. 98, (June 25, 1919.) The quality of a paper does not depend entirely on its composition and strength, for a well made paper manufactured from second class materials may be superior to an improperly made paper prepared from high grade materials. In the early days of woodpulp it may have been inferior to rag stock, owing to imperfections in the processes; but it is a very debatable question if this still holds true at the present time, when the quality of woodpulp is being improved every day while that of rags is steadily decreasing. The microscope can certainly tell the nature and approximate proportions of the various fibers, but gives no information as to the method of preparation which exerts a very great influence on the quality and durability of the finished paper. Though the strength of the paper may give valuable indications as to its quality, it is not the only nor even the most important factor. The conclusion to be drawn from Wurster's investigations is that the main cause of the deterioration of paper is to be found in the acids which it contains, or absorbs after manufacture, and this in turn depends largely on the amount of hydrocellulose in the paper. The amount of hydrocellulose also affects the strength of the paper. According to Wurster "A paper containing no organic salts and no soluble organic compounds, which for the most part are hygroscopic, is much more likely to be durable than a paper merely conforming to the Prussian specification." To obtain a true appreciation of the durability and quality of paper recourse should be had to physical and chemical tests, and also to the paper experts. A Bureau of Paper Standards, similar to the one in New York, should be established, which would prepare specifications and standards for various kinds of papers, and could act as arbitrators should occasion arise. The strength of the paper can be determined in two ways;—by the use of the Nooley or the Mullen tester, which gives the bursting strength; or by means of a dynamometer, which give the tensile strength. Both give valuable information.

**Part 2.** 41, p. 146, (July 10, 1919.) A plea for standard methods of testing paper, and for establishing permissible limits of variations from specifications. A number of examples are given of cases where the paper expert may solve a problem where chemical analysis fails to do so. (Continued.)—A.P.C.

**E. 5. The chemistry of sulphite cooking.** (Au sujet de la connaissance du processus de cuisson de la pâte au bisulfite.) Chambonet, ex-ingénieur chimiste des



Papeteries de l'Ariège. La Papeterie, **41**, p. 14, (May 25th, 1919.) To arrive at a satisfactory and proper method of cooking it is essential to know the composition of the liquor and the consumption of  $\text{SO}_2$  and  $\text{CaO}$  at each stage of the process. Series of analyses were carried out on liquors from industrial cooks and not from experimental cooks. Total  $\text{SO}_2$ , free  $\text{SO}_2$ ,  $\text{SO}_2$  combined with lime,  $\text{SO}_2$  combined with organic compounds,  $\text{CaO}$ ,  $\text{H}_2\text{SO}_4$ , organic solids and inorganic solids were determined. The direct, indirect, and mixed systems of cooking were investigated.

**Part. 2.** **41**, p. 65, (June 10, 1919.) The results obtained on two cooks by each system are tabulated and also shown graphically.

**Part 3.** **41**, p. 110, (June 25, 1919.) The  $\text{SO}_2$  content falls off steadily from the beginning to the end of the cook. This is due to 3 main chemical causes; viz., formation of stable organic compounds such as lignosulfonic acid, formation of unstable organic compounds of the nature of  $\text{SO}_2$ -aldehydes, transformation of  $\text{SO}_2$  into acids of the theoretical series and ultimately into  $\text{H}_2\text{SO}_4$ ; and also to loss of  $\text{SO}_2$  with the relief gases. In direct cooking there is an apparent loss of  $\text{SO}_2$  due to dilution of the liquor by the condensed steam. The author discusses the constitution of lignin and agrees with Klason's view that it is a condensation product of coniferyl and oxyconiferyl alcohols.

**Part. 4.** **41**, p. 151, (July 10, 1919.) A further discussion of the constitution of lignin strengthening the view that it is a condensation product of coniferyl alcohol. The reaction with  $\text{H}_2\text{SO}_3$  probably consists in forming esters similar in constitution to phenylsulphonic acid (benzenesulphonic acid.) Monohydric phenols do not yield appreciable amounts of esters with  $\text{H}_2\text{SO}_3$ , but react much more readily with  $\text{H}_2\text{SO}_4$ . Polyhydric phenols; e.g., resorcin, react very readily with  $\text{H}_2\text{SO}_3$ . (Lignin is a dihydric phenol.) (Continued.)—A.P.C.

**K-7. Hydraulic elevator for refiner cylinders.** (beater rolls). (Élévateur hydraulique pour cylindres de piles raffineuses dans les machines à papier.) Fr. patent No. 484,736. F. W. Warren, U. S. A. La Papeterie, **41**, p. 107, (June 25, 1919.) The patent covers a device whereby the cylinder may be raised from the bed plate and replaced without disturbing the adjustment.—A.P.C.

**K-7 Improvement to (pulp) beaters.** (Perfectionnements aux machines à battre la pâte à papier.) Fr. Pat. 485,361. James Nuttal, England. La Papeterie, **41**, p. 60, (June 10, 1919.) By means of suitable partitions and openings a thorough mixing of the stock as it leaves the beater cylinder is obtained.—A.P.C.

**K-7. Pulp refiner.** (Dispositif de triturateur raffineur pour pâtes à papiers ou à cartons.) Fr. No. 488,718. Neyret, Beylier & Cie. La Papeterie, **41**, p. 55, (June 10, 1919.) The refining surfaces consist of two frustrums of cones, one of which is fixed, the other revolving, the fixed one being corrugated or supplied with blades on its concave surface and the revolving one on its convex surface. The angle of the cone may vary from 50 degrees to 135 degrees. The distance between the two surfaces may be regulated by shifting either of them in a direction parallel to the axis; or the fixed cone may be forced against the revolving one with a constant pressure by means of adjustable weights through a system of levers and gears. The chamber from which the pulp passes between the refining surfaces is fitted with an agitator

so shaped that it throws the pulp between the refining surfaces, thereby greatly decreasing the work to be done by the refiner and increasing its efficiency.—A. P. C.

**K-8. Notes on the coloring of paper.** (Réflexions sur la coloration.) B.L. La Papeterie, **41**, p. 160, (July 10, 1919.) At times paper-makers use as many as 5 or even 10 different colors to obtain the proper shade, while by a judicious choice of colors 2 or 3 would usually be sufficient. It may be necessary to use more when a mistake has been made. In that case the law of complementary colors should be borne in mind. The loading exerts a marked influence on the absorption of colors; on the whole they absorb mineral colors better than aniline colors. The former as a class are also much more resistant to the action of light than the latter. A fact worthy of consideration is the increase in the weight of the paper due to mineral colors.—A.P.C.

**K-10. Paper sizing.** O. Aschan... Meddelanden från Industrins Centrallab., 1917, Nr. 4. (Chem. Zentr., 1919, **90**, 11, 190, through J. Soc. Chem. Ind., **38**, p. 357a, (1919). In the sizing of paper with rosin size and alum, as much as two-thirds of the weight of the alum may be lost in the back-water. The running of the stuff on the machine with circulation of the back-water is an important factor in obtaining resistance to ink. The sizing deposit itself consists of a mixture of aluminium resinates with free rosin acids which can be extracted with ether; there is also a small amount of free aluminium hydroxide. An excess of free rosin acid is not an effective substitute for a deficiency of aluminium rosinate. Experiments made with resinates precipitates without the presence of paper fiber indicated that ferric and chromic salts could probably be used to produce sizing effects, and certainly aluminium sulphate containing iron salts as an impurity is a useful sizing agent. The percentage of free resin acids in the sized paper appears to stand in a definite relationship to the total alumina in the ash.—A.P.C.

**K-12. Improvement to paper machines.** (Perfectionnements aux machines à papier et procédé de fabrication.) Fr. patent No. 478,839. R. J. Marx, England. La Papeterie, **41**, p. 59, (June 10, 1919.) The patent covers the employment of a suction roll under the first couch felt.—A.P.C.

#### PULP AND PAPER MAGAZINE AT CHICAGO.

The Pulp and Paper Magazine of Canada, and other journals published by the Industrial and Educational Press, Ltd., will be "at home" in Booth 138, at the National Exposition of Chemical Industries at Chicago, Sept. 22-28. Mr. H. W. Thompson, the Western Advertising Manager of the magazine, with his assistants, will have charge of the booth. A cordial invitation is extended to all friends to make themselves at home. Members of the Technical Section who visit the Exposition are requested to register on arrival. Many are expected to attend the Fall Meeting of the Technical Association of the Pulp and Paper Industry.

The other magazines included are: Canadian Mining Journal, Canadian Textile Journal, and Iron and Steel of Canada.

The Canadian Seigneur of the Canadian Government Merchant Marine, sailed last Friday on her mail n trip from Montreal to Liverpool, with a full cargo of grain, pulp, newsprint, sugar, meats and lumber.

The Canadian Seigneur is the sixth Canadian-built Government merchant steamer to enter in commission.



# UNITED STATES NOTES

Following numerous conferences between the manufacturers and paper makers in Holyoke, Mass., and vicinity, the demands of the latter for increased wages made several weeks ago through the Eagle Lodge of paper makers were met more than half way by the manufacturers and new rates of pay amounting to an increase of 14 per cent will go into effect September 1 and will continue until July 1, 1920. Some 2,200 men, including 1,700 tour workers in the paper mills in Holyoke and 500 others in Wilbraham, Woronoco and Mittineague will be benefited by the increase. The tour workers' original demands called for an increase of 25 per cent, and the rate finally accepted was but one of several counter propositions by the manufacturers, all other suggestions by the latter having been flatly rejected. In the new working schedule agreed upon the manufacturers acquiesce to the demands of the workers in the matter of suspending operations for 32 hours on Christmas and the Fourth of July holiday instead of 24 hours as heretofore.

Officials of the Chemical Foundation, according to word from an authoritative source, have laid before the President's advisers at the Peace Conference a plan which they believe will protect adequately the interests of American dye consumers in connection with the disposition of the German vat and other dyestuffs. This plan provides, it is understood, for the appointment of an impartial American representative who shall represent neither the producers nor consumers to go abroad and act for the United States in carrying out the distribution of German dyestuffs offered for export, as provided for under the provisions of the peace treaty. Accompanying such a dye commission would be a representative of the dye consumers and a representative of the dye producers who would act as unofficial advisers of the commissioner. This plan was put forward by the Foundation officials, it is said, solely in the interest of American dye consumers. The dye manufacturers, it was pointed out, have at present adequate, if temporary, protection, but consumers have little or no protection because of the fact that the United States has no representative upon the Inter-allied Reparation Commission, under whose direction the German dye will be distributed.

The case of the Monarch Paper Company, of Kalamazoo, Mich., against the Canadian Pacific Railroad, involving the rate on china clay in bulk, carloads from Montreal Wharf, Quebec, to Kalamazoo, has been decided by the Interstate Commerce Commission in favor of the paper company. The rate charged by the railroad company is declared to be unreasonable to the extent that it exceeded the rate contemporaneously applicable on china clay in packages, in carloads. The amount of the reparation due the Monarch Paper Company is to be computed and an order issued for payment.

The Richardson Paper Company of Lockland, Ohio, which, with its predecessor, the Haldeman Paper Company, has operated mills at Lockland for more than 70 years, has authorized a new issue of stock totaling \$1,000,000 preferred. With the proceeds of the issue of stock it is planned to retire all mortgage and other indebtedness. On the basis of expert reports

the property is given a replacement value of \$2,749,539.19, excluding good-will, trade names, etc. This represents a value of more than \$274 per share on the preferred and more than \$102 on the common stock. Since 1898 the business has consistently shown a profit from operations each year. The million dollar issue of stock was sold at 102 and will net 6.86 per cent on the investment. Of the capitalization of \$2,000,000 in preferred stock, \$1,000,000 has been issued, and of the common stock \$1,700,000 of the \$2,000,000 has been issued.

The Glendale Paper and Pulp Company, recently organized at Kalamazoo, Michigan, with a capital of \$250,000, has engaged Billingham & Cobb, mill engineers and architects, to draw up plans for a modern plant to be erected at once on a site near the mill of the Kalamazoo Vegetable Parchment Company. The new concern will turn out as its main product paper made by a process, just perfected, whereby waste wax paper is reclaimed by separating the wax and reconverting it for use, while the paper is made into a pulp and used again in the making of paper. Heretofore, wax paper manufacturers have been destroying their waste wax paper. The machinery for the projected plant has been nearly all purchased, and it is planned to rush construction work on the mill buildings so that operations may be begun at an early date. The officers of the newly formed organization are: Jacob Kindleberger, president; W. J. Lawrence, vice-president; S. Ward Kennedy, secretary, and C. S. Campbell, treasurer.

As a step toward conserving the decreasing supply of American pulpwood used in the manufacture of newsprint paper, Senator Watson of Indiana introduced a resolution in the Senate last week authorizing the Secretary of Agriculture to make a survey and preliminary investigation of the nation's available pulpwood timber supply. The Secretary also would be directed to make recommendations for pulpwood utilization. The sum of \$100,000 is asked to carry on the survey and investigation.

Investors in business enterprises in the United States are declared by an authority on investment securities to run well into the millions, whereas before the war they were counted only by the hundreds of thousands. Paper investments are proving attractive to a great many. It is said to be surprising how many persons of moderate means are investing in the paper industry.

The newly organized Universal Pulp Company of St. Joseph, Michigan, expects that its plan will be in operation by the first of October. The concern is capitalized at \$50,000, and present plans contemplate the production at the outset of about ten tons of dried box board a day.

A. D. Emery, of the Royal Securities Corporation, has been elected one of the Montreal representatives of the Dominion Publicity Committee for the 1919 Victory Loan, with headquarters in Toronto. This committee has charge of a good part of the Victory Loan literature, and this year, it is understood, a great deal of it will be turned out in Montreal.

# PULP AND PAPER NEWS

The Thompson & Norris Co. of Canada, Limited, manufacturers of corrugated boxes, intend erecting a large addition to their premises at 353 Pape Avenue, Toronto. The extension will be of brick, one-storey high, 287 x 150 feet, with steel columns and beams and reinforced concrete slab construction.

In a recent note to an officer of the Canadian Paper Trade Association in Toronto, A. L. Dawe, Secretary of the Canadian Pulp and Paper Association, Montreal, says: "London is the centre of the world even yet. Am finding very sympathetic attention for Canadian paper, although it looks like a runaway market in the United States and Canada."

A charter has been granted to the Fibre-Packing Co., of Canada, Limited, with headquarters at Walkerville, Ont., to manufacture and deal in fibres, fibre-board, fibre containers and other similar products. The capital stock is \$100,000. Among the incorporators are F. C. Walker, Detroit, J. H. Coburn, C. G. Benfield, A. J. Gordon, Walkerville, and W. A. Smith, Kingsville.

Eric Nordberg, of J. A. Nordberg, Limited, 30 Queen Street, London, Eng., was in Toronto and Montreal last week calling upon the paper trade in the interest of his firm. He was on the search for various lines of Canadian made papers and pulp.

R. P. M. Manning, of R. P. M. Manning & Co., merchants, importers and exporters, Christchurch, New Zealand, was in Montreal last week in an effort to secure shipments of paper to New Zealand.

A charter has been granted to the Talking Book Company, Limited, with headquarters in Toronto and a capital stock of \$125,000, to acquire any interest in any inventions, patents, licenses, copyrights, etc., conferring an exclusive or limited right to use the same, or any secret or other information as to any invention which may seem to the company to be profitably dealt with, and to manufacture and deal in talking books, talking dolls, animated toys of all kinds, advertising records and the like. Among the incorporators are George R. Sproat, Charles H. Kemp and John C. Thomson, of Toronto.

William Innes, of Merrittin, who returned some time ago from overseas and was for a considerable period English representative of the Interlake Tissue Mills, is spending a few weeks in Toronto, assisting in the supervision of the splendid exhibit of the company in the Manufacturer's building at the Canadian National Exhibition, Toronto. The Interlake Tissue Mills booth is a centre of great interest and among the souvenirs given away were some fifty thousand sample packages of Interlake crepe paper table napkins, thousands of patriotic fan flags, hand mirrors and watch fobs.

The annual regatta of the residents of Trent Bridge, Ont., was held on Friday of last week, and was a great success. One of the most active members was W. F. Christie of the John Christie Co., Toronto, who is a past president of the Association.

J. J. Carrick, ex-M.P., Port Arthur, Ont., spent a few days in Toronto this week on business. He is the own-

er of the Pic river concession, the rights to cut pulpwood on which he obtained from the Ontario government in December, 1916, at fifty cents per cord and the usual fees. It is understood that Mr. Carrick's company will shortly proceed with the construction of a large pulp plant at Port Arthur. When interviewed with regard to the commencement of the work Mr. Carrick intimated that he had nothing to give out just at present.

I. H. Weldon, President of the Provincial Paper Mills Co., Toronto, is spending a few days in Port Arthur and vicinity. He stated that, if circumstances warranted it, they would erect paper mill in Port Arthur next spring, but he could not definitely state when construction would be begun. While business has been good there were other conditions to be taken into consideration and the work would go ahead just as soon as the company could see its way clear to do so.

An instance of the progress of the times is indicated in the announcement of an aerial survey firm in Nova Scotia, who are advertising in the press in Toronto and other cities that they are prepared to enter into contracts to photograph and survey timber, pulpwood and water areas in any of the eastern provinces or states and to detect and report on forest fires as well as distribute advertising propaganda of all kinds. In a recent interview, G. C. Piche, chief forester of Quebec Province, stated that the protection of timber limits so far by aeroplanes has been very effective, and as soon as the new system proved to be possible in all regions of the province, it would be exclusively adopted.

A. M. Huestis, of Toronto, Canadian representative of the Kallgleisch Corporation of New York, and Mrs. Huestis, who have been spending several weeks in Maine, have returned home.

F. P. Nicely, manager of the LaSalle Paper Co., South Bend, Indiana, accompanied by his wife and Master Robert, have been on a motor tour throughout Ontario. While in Toronto they were the guests of their son, Captain Claude E. Nicely, of the staff of J. M. Dent & Sons, Limited.

G. W. Sulman, bookseller and stationer, Chatham, Ont., who has represented West Kent in the Ontario Legislature for the past eleven years in the Conservative interest, announces that he intends to retire from political life and will not again be a candidate. Mr. Sulman is a former Mayor of Chatham.

W. E. Wingrove, representing John Dickinson & Co., London, Eng., was in Toronto during the past week on business on his way to Australia, where this widely known firm of English paper makers intend establishing a branch plant. J. M. Dent & Sons, Toronto, are representatives of the company in Toronto, and it is announced that Dickinson & Co. expect in the near future to be able to ship some of their bond, envelope and book papers to Canada. Mr. Wingrove is a former officer of the 3rd Lancashire Fusiliers.

The strike of the employees of the St. Catharines, Niagara and Toronto railway in the Niagara district

has seriously interfered with the shipments of some of the paper and pulp companies at Merritton and Thorold, Ont., who use the cars of the road for switching purposes.

A. M. Barkwell, of the Barkwell Paper Co., Winnipeg, Man., was in Montreal and Toronto during the past week calling upon the paper trade.

F. J. Campbell, general manager of the Canada Paper Co., Windsor Mills, Que., has been spending a pleasant holiday at Lake Joseph, Muskoka.

The last issue of the Canadian Official Record has reached its subscribers and, after a career of about a year it is now numbered among the things of the past. It is announced that the war being over and the high cost of production are reasons for the suspension. Lately it has been costing about six hundred dollars a week for each edition of the Record, which was never very enthusiastically received by the press of Canada since it contained only Orders-in-Council and department activities at Ottawa, and other stale news, and the news lacked interest and freshness when it reached readers.

Stantons, Limited, manufacturers of wall paper, Toronto, have taken over the factory at the corner of McAlpine and McMurrieh Streets, Toronto, which was until lately occupied by the McAlpine Tobacco Co., who have removed to Hamilton. The building is 120 x 50 feet four stories, including the basement, and will be used by Stantons, Limited, as a warehouse.

The large stable of the St. Maurice Paper Co. at Three Rivers, Que., was recently destroyed by fire, the loss being \$20,000, partly covered by insurance. Twenty-four horses, fifty loads of hay and a carload of oats were also consumed. The origin of the fire is unknown.

J. S. A. Whealy, President of the Corrugated Paper Box Co., 187 Geary Ave., Toronto, has had plans prepared for a large paper bag factory which will cost \$75,000 to erect.

Col. J. B. Maclean, President of the Maclean Publishing Co., Toronto, lost his only son Hector Maclean, aged sixteen years, the end coming suddenly when the boy was holidaying at Cochrane Camp, Temagami. Acute indigestion was the cause of death. The deceased was a student at Upper Canada College and his parents were summering at St. Andrews-by-the-Sea, N.B., when they received the sad news.

Martin Valiquette, forest engineer of Quebec city, lost his life by drowning when surveying the forests on the North shore of the Gulf of St. Lawrence for the Quebec Department of Lands and Forests. Two others, who were in the canoe with him when it upset, would also have met death, had not a guide who was following them struck out in the rushing waters and rescued them.

It is expected that the annual meeting of the Canadian Paper Trade Association will be held in Montreal on Monday, September 15th. The Toronto and Winnipeg members are favourable to this date, according to Secretary N. L. Martin, of Toronto, and as soon as approval is obtained from the Montreal and eastern members, notices will be sent out to the trade.

W. S. Barber, of the staff of the Provincial Paper Mills Co., Toronto, has returned from spending his holidays in Detroit.

H. L. Davidson and his brother, who have been overseas, spent a few days in Toronto this week calling upon the members of the paper trade. Messrs. Davidson were members of the Australian army and were on their way to the coast. They will visit a number of United States cities before their return. H. L. Davidson represents

E. S. Wigg & Son, Limited, Adelaide, South Australia, and interviewed a number of manufacturers in regard to securing Canadian paper of all kinds for the Antipodes.

J. E. Dennie, Limited, with a capital stock of \$24,000 and headquarters in Toronto have been incorporated to deal and sell merchandise and groundwood pulp, sulphite pulp, sulphate pulp, paper, paper bags, cardboard and other material. The incorporators of the company are W. H. Dwyer, John A. Lea, Harold A. Miller and Chas. W. Hall, all of Ottawa.

The People's Printing Co., Limited, with headquarters in Winnipeg and a capital stock of \$10,000 has been granted a charter to do a general printing and publishing business. Among the incorporators are B. Levcovitch and S. Simkin.

The Canadian Paper Trade Association has under consideration the matter of issuing a booklet on the trade customs of the organization which will be distributed to retailers, printing establishments and other consumers. The need of such a publication has been felt for some time.

A federal charter has been granted to the Leader Publishing Co. of Montreal, Limited, with a capital stock of \$20,000 and headquarters in Montreal. The company is empowered to carry on business as proprietors and publishers of newspapers, books, magazines, etc., and to do a printing, lithographing and book-binding business. Among the incorporators are Thos. P. Hawatt, Joseph G. Vanwertzberghe, Samuel W. Malebn, R. R. Chaput and others.

#### DISCOVERED PULPWOOD BY AIRPLANE IN LABRADOR.

Curling, Nfld., Aug. 22.—Cruising in airplanes over Labrador disclosed great timber lands from which millions of cords of pulpwood could be cut and rolled to streams for direct shipment, members of a Boston expedition which spent the past month there said to-day.

The expedition was forced to halt here on its return when the steamer Granville struck an iceberg and experienced boiler trouble in the Gulf of St. Lawrence.

Captain Daniel Owen, R.A.F., head of the expedition and other members of the party left to-night by train for Boston.

The expedition, which included in its equipment three airplanes and comprised a personnel of twenty persons, among them five aviators, operated seventy miles north of Battle Harbor. Two million acres of timber lands was explored by air and by the ordinary methods of timber cruising. Pictures taken from the air, numbering 13,000, are said to show dense growths of pulp material in such manner that the most available places could be located readily. This use of the airplane was looked upon as opening a new field for commercial aviation.

The planes cruised inland for more than 100 miles, flying at heights of 2,000 to 9,000 feet.

#### PULP MILL PROJECTED AT SILLERY.

Quebec.—From reliable sources it is learned that an option has been taken upon property situated around Sillery Cove for its eventual purchase for the erection of a nine million dollar pulp mill.

The promoters are well known American financiers and practical pulp mill men.

The option will expire in thirty days.



### CANADIAN TRADE CONDITIONS.

Toronto, August 25.—Business in all lines of paper keeps up to a splendid level. There is a big demand for newsprint which grows keener all the while and prices are bound to ascend if the law of supply and demand regulates affairs. Circulation of all the big dailies is increasing all the while and advertising is strong. Large space is being used in many dailies and weeklies by the Ontario Referendum Committee in connection with the forthcoming vote on the Ontario Temperance Act, which will take place some time in October.

A recognized authority on publicity announces that figures secured from the leading dailies indicate that Canadian newspapers are favored with a substantially increased volume of advertising as compared with a year ago. Figures for the first six months of 1919, as compared with the same period in 1918, show gains ranging from 15 to 35 per cent. Had it not been for the unsettled conditions due to strikes, the increase would undoubtedly have been greater. All indications point to new high records during the coming fall and winter.

The pulp and paper companies are in a measure preparing for next year and most of them will send larger numbers of men to the bush than ever to get out pulpwood, but the expense will be higher. Wages range fully as high as last season while provisions show an augmented outlay from ten to fifteen per cent. Operating costs in paper mills are going up all the while owing to steady jumps in wages, freight and cartage rates, raw materials, coal, etc. The only encouragement is that there will be a greater number of men for the camps than a year ago. Hay and oats are very much higher than last year. Hay is now being held by farmers at \$25 per ton and up in the barns, loose oats are also up.

The box-board manufacturers recently raised their rates ten per cent due to the advance in wages and the increase in the cost of raw material. There is a good demand for groundwood pulp and quite a number of inquiries are now being received from the other side of the line. Sulphite is strengthening constantly.

Notices are being received by Canadian jobbers from firms over the line withdrawing all prices. One firm state that they have had in effect since early in the year a guarantee against a raise in the prices of their fine writing papers and that guarantee is now removed in view of economic developments. There has been an advance of one cent in matrix papers and blotting papers. Another concern sends word to Canadian customers that, for the purpose of avoiding any misunderstanding, all prices are quoted in United States currency or New York exchange. At this time U. S. dollars are at a premium in comparison with the Canadian dollar. Retiring invoices with New York exchange will, therefore, be the equivalent of a slight increase in their cost to Canadian customers. The firm adds, "This is a burden which we sincerely regret that you are required to assume, but, as stated, our price is based on U. S. currency and it is necessary for us to secure an income of equal value."

There are numerous inquiries from Great Britain and other countries for Canadian paper of every kind and during the past week representatives of half a dozen importing houses and agencies were in leading cities of Canada looking for supplies. British consumers are showing great interest in the paper products of the Dominion and are prepared to meet the Canadian producers more than half way. There is a slight improvement in shipping conditions although tonnage rates still remain abnormal. Toilet and tissue mills are away behind in orders, and it is rumored that another coated paper plant will shortly undertake the work of extending in order to keep pace with the business in hand. Envelope manufacturers report trade as rather quiet at the present time, but all other branches in the stationery line say there is no let up in the amount of business that is coming their way. There is an active requisition for building papers of all kinds and all materials that enter into the manufacture of roofing such as tar paper, fibres, etc. Shingles have gone so high in price that other roofing material is in abnormal demand. With the approach of fall, business is getting better all the while in all sections of paper and pulp making, and before many weeks elapse,

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any surplus to  
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and some industries who will undertake the cost of extra size.

Wrappings are moving in good volume and the demand for kraft is keen, with prices likely to go up in the near future. Specialty mills have all that they can attend to and the prospect of activity in all printing establishments is exceptionally bright. The rag and paper stock market continues to reflect a lively state of affairs and there is a decided shortage in cuttings and clippings, while all the local sources of supply are being scoured. Prices on every item show a tendency to rise. There has been only one price reduction in paper in Toronto in a long time, and that is on sulphite bond, which has been cut about a cent and a half per pound in order to meet certain competition.

At the annual Press Day held this week at the Canadian National Exhibition, Toronto, about one hundred and fifty publishers from various parts of the province foregathered and all reported business as good and the outlook for the fall in their respective communities as favorable. This augurs well for the paper trade because the country publisher is a good barometer of local conditions. He consumes a large portion of the product of the paper mills. A number complain of the shortage of help in several towns and the difficulty in securing printers.

#### NEW YORK MARKETS.

New York, August 23. The market for paper continues in a very strong position. Demand shows no abatement; if anything, it is gaining momentum as the fall months draw near, and indications are that it will become stronger as is customary toward autumn. There has been quite some apprehension felt by many members of the trade as to whether the activity in the market during recent weeks did not constitute that which usually arises along about the end of September when consumers and jobbers commence to cover their fall requirements. Others, however, have contended that the present spell of buying has been nothing else than the usual period of spring activity, delayed this year because of abnormal conditions growing out of the war. Present indications are that those who entertained the latter view are correct and that the market will pass out of the prevailing spell of heavy buying right into the fall activity. In this event, the market has several months of continued buying activity ahead of it.

The situation in newsprint paper is rapidly reaching a critical stage in the States. The increase in consumption during the past few months has been of such extent that mills are finding themselves unable to fill all the wants of publishers, and everything seems to point to a serious famine in paper of this kind before many more weeks have passed. Ordinarily manufacturers pile up a surplus during the summer which tides them over the heavy consumption in the fall and winter, but this year such demands have been made upon them by consumers that practically no surplus exists. It is estimated that the production of newsprint on this side of the border has increased at the most this year six per cent, whereas consumption has been fully 25 per cent larger, which figures alone are sufficient to tell the story. Had it not been for Government regulations, there is no telling where prices might have advanced to within the past several months, and now that the time is drawing nigh when liberal restrictions are to be removed, newspaper publishers are showing considerable nervousness over

what may happen, although the situation has reached the point where it is no longer a question of price so much as it is in acquiring sufficient paper to carry the record-breaking volume of advertising they are being favored with.

The fine paper market is possessed of a very firm undertone, and manufacturers are finding a ready outlet for virtually all of the product they have to dispose of. Mills are running at capacity and yet available supplies do not appear adequate to meet the demand. One reason for the large consumption of bond and ledger papers at present is that business houses of all varieties are conducting vast circularizing campaigns in an effort to establish themselves in new markets and to secure their share of the increased business resulting from the war.

Wrapping papers also are firm in price and are moving in steadily increasing quantities. Consumers and jobbers are endeavoring to get an early start in covering their needs for the holiday season, and are placing orders with apparent random wherever they can get them accepted. Tissues are firm and in good demand. Bag papers are sought in increasing volume and glassine papers are finding a ready market.

Renewed vigor characterizes the board market. Mills, practically without an exception, are booked far ahead and are running their machines at full capacity trying to make some headway in catching up with orders. Box-makers are buying actively apparently in the fear that if they do not cover holiday requirements now they will be unsuccessful in getting all the board needed, and are freely meeting the prices quoted.

**Ground wood.**—Demand for mechanically ground wood shows no abatement and the market rules exceedingly strong. Newsprint mills are constantly on the lookout for available supplies and are quickly absorbing such lots as are offered in the open market without stopping to squabble over prices, with the result that producers are receiving top market prices in almost every selling transaction. About \$30 per ton at the grinding plant is the figure generally asked and paid for ground wood of prime quality, and reports are heard of some sales at beyond this level.

**Chemical Pulp.**—Although paper manufacturers have not been quite as keen buyers this week, demand has been of broad enough proportions to absorb all the supply offered, and prices have ruled strong, with advancement recorded in one or two instances. Kraft pulp, of both domestic and foreign make, has been especially firm, this being due to the demand emanating from board mills more than to any other cause. Demand for kraft pulp, in fact, has assumed proportions which manufacturers and dealers did not entertain even the fondest hopes for a few months ago, and the greater portion of the surplus stock existing at that time has been removed from the market, with consumers still purchasing in a manner that seems likely to create a scarcity before long. Domestic kraft of standard quality is selling freely at \$90 per ton at the pulp mill, or at the same price quoted on Scandinavian kraft, which in itself is indicative of the strong demand in this country. Newsprint sulphite is another strong item, and is easily fetching \$70 to \$75 at the pulp mill. Easy bleaching sulphite is moving in good volume at \$95 to \$100, while domestic bleached of No. 1 grade is almost unobtainable under \$120 a ton, with sales reported in some cases at \$125.

**Rags.**—The rag market has quieted down to a further degree this week, but there has been little alteration in values chiefly because dealers and packers are hold-

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ing stocks at firm prices. Evidently a good many paper mills have covered their requirements for at least a short time through recent purchases, and the retirement of these buyers has taken away much of the snap to the demand that was such a feature up to several weeks ago. Packers declare, however, that it costs them just as much as heretofore to replace the rags they sell and they therefore are refusing to do business unless securing the prices wanted. New cuttings of all kinds are very firmly held and buyers seeking bargain lots are having scant success. No. 1 white shirt cuttings are selling at around 15.50 cents a pound f.o.b. New York, with an occasional transfer of a particularly fine grade of these rags by a dealer to a mill at 16 cents. Old whites are notably steady at a basis of about 7.50 cents New York, while re-packed thirds and blues are moving in a fairly consistent manner at prices ranging from 1.25 to 1.50 cents f.o.b. shipping point. Roofing rags are firm and moving well notwithstanding continued heavy arrivals from abroad, the present basis of prices being between 2.80 and 3 cents f.o.b. New York for No. 1 packing.

**Paper Stock.**—Prices on old paper have advanced this week in startling fashion. Following the settlement of the strike among sorters and collectors in New York at the end of last week, box board manufacturers came into the market and began buying in a reckless manner, their one object apparently being to get stock irrespective of its cost. The logical result was that values have gone skyward, prices throughout the list having scored net advances averaging \$5 per ton. No. 1 mixed paper and folded news, the two grades mainly used by board mills, have led the demand, and sales of the former at 90 to 95 cents per 100 pounds New York, representing a rise of \$5

to \$6 a ton, have been recorded, while folded newspapers have jumped in price from 70 to 75 cents to above \$1 per 100 pounds, sales having been made at \$1.05 at the point of shipment. Savings and ledger stock, while not encountering the demand prevailing for low grades, have been greatly enhanced in value, and mills appear to be flocking into the market to buy before prices take another jump. Five and one-half cents per pound is about the lowest dealers will entertain orders for No. 1 hard white shavings, while 1.50 cents is the minimum price considered on soft white shavings of No. 1 quality. Books and magazines have sold at 2.65 to 2.75 cents f.o.b. New York, an advance of more than \$5 per ton; kraft paper is easily commanding 3.25 cents; ledgers and writings 2.75 cents and No. 1 manilas 1.30 to 1.40 cents.

**Rope and Bagging.** Demand for old rope and bagging has undergone little change of importance this week and prices remain at about the same levels. Consumers are buying in a reserved manner, yet on the whole are absorbing fairly large tonnages, at any rate sufficient to sustain values. No. 1 manila rope is selling at 5.75 to 6 cents per pound at the shipping point and ex-dock, and the market appears to be unusually bare of large accumulations, which condition is creative of a firm tone to prices. Scrap bagging is moving in restricted volume at a price basis of 3 cents a pound f.o.b. New York for No. 1 packing, with roofing bagging commanding 2.50 to 2.60 cents. Gummy is firmly held at between 3.50 and 3.75 cents at the point of shipment.

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KRAFT WRAPPING — SULPHITE WRAP-  
PING — MANILAS — FIBRES — BOX-  
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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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# *Claflin* *Continuous Beater*

*One-quarter the floor space*

*One third the cost*

Claflin Continuous Beater for Beating and brushing out repair stock.

For refining ground wood sulphate and sulphite tailings this machine stands in a class by itself.

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# EDITORIAL

## *IMPORTANCE OF CHEMICAL INDUSTRIES.*

To state which is the most important class of industry is about as easy as to say who won the war. The cases are quite comparable. We may truly say that each class of fundamental industries is most important, because without it, the others would be seriously crippled, if not put entirely out of business. Thus we cannot live without farming, ranching and dairying, but these can not be carried on without machinery nor market their products without means of transportation and business organizations.

The importance of some industries, like farming, textile manufacture and wood-working is obvious. Others, like many of the chemical industries are more like an unobtrusive, powerful force, that is felt rather than seen. Of course we are aware of some plants that are smelled so need not be seen.

Events of recent years have shown the world that industrial chemistry is the keystone of nearly the whole industrial structure. This fact was clearly shown by the lamentations that arose when a comparatively few chemical products which had been habitually imported from Germany were shut out by the war. Among them were fertilizers, glassware, medicines and colors. To make good the lack, an immense industry had to be built up—almost out of thin air. England and France, Canada and the United States, all were affected. Enormous plants for the manufacture of explosives, fertilizers, dyestuffs, metallurgical products and a host of other things were quickly developed. And with the growth of these industries there was necessarily a corresponding development of processes and equipment.

An interesting index of the growth of the chemical and allied industries has been the size of the National Exposition of Chemical Industries from year to year. The first four were held in New York, where more and more space had to be acquired till last year it occupied four floors of the spacious Grand Central Palace. This year the management have decided to hold the affair in Chicago, making use of the huge Coliseum and the Armory. It will not be surprising if an even bigger success is scored than in past years. Chicago as a manufacturing centre is but little appreciated by those who have not been there. Moreover, it is central to many industries that would be a long way from home on Broadway—or Lexington Ave.

The time of the exposition has been well chosen, as former years have proved. The week of Sept. 22nd seems convenient for everybody. And everybody goes. The attendance in New York was numbered by thousands each day. An examination of the booths is a

liberal education. Many processes are seen in operation and wonderful apparatus is explained and interesting products may be examined. The value of such examination is shown by the fact that a principle first applied to metallurgical work is now in successful operation in a pulp mill. Once an alert technical man or superintendent sees a machine working or can examine it with explanations from an engineer, he can tell immediately whether it will fit somewhere in his plant. It is by borrowing ideas that progress is made.

Not the least important feature of the exposition is the number of technical and engineering societies which hold meetings during that week. The one that particularly concerns us is the Technical Association of the Pulp and Paper Industry whose meeting is called for September 24, 25, 26 and 27 (Wednesday to Saturday). A full announcement appears on another page. A pleasant part of the program is the trip to the Forest Products Laboratory at Madison, Wis. Several opportunities are afforded for visiting the exhibits. It is hoped that a large number will attend from Canada, as well as from the United States.

The Pulp and Paper Magazine, with the other journals published by the Industrial and Educational Press, will be at home to all visitors in Booth 138. Canadians are especially invited to make it a rendezvous.

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## *THE JUDGMENT.*

The long awaited day arrived last week. After long and serious consideration the Paper Control Tribunal expressed the opinion that for the five months, July, August, September, October and November, 1918, the basic price for newsprint paper in Canada should have been \$66 per ton. As B. K. Sandwell intimated might be the case when he addressed the Newsprint Service Bureau, the manufacturers do not get what they received. This, of course, applies only to those months—months in which Canadian mills operate under the most favorable conditions. As the Controller had set a price of \$69 per ton, publishers who bought Canadian paper during that time are entitled to a refund on credit of \$3 for each ton received.

Paper manufacturers are naturally disappointed, but have played the game too well to kick at the umpire's decision. Yet it can not be said they have lost the game, since it now stands like a tug-of-war with the worker on the manufacturers' side of the line, as shown on another page.

Subsequent to the period considered by the judges the costs of production have been unquestionably higher

than for the months covered. It will be very surprising indeed if the Tribunal does not let the \$69 price stand, if it is not raised.

The most interesting information would be an opinion from the Tribunal on the \$50 price originally saddled on the manufacturers and the \$52.10 price subsequently forced by the Controller. Let us hope there will be no future occasion for trouble of this period between paper maker and publisher.

#### CHARACTER COUNTS MOST.

A recent canvass of 6,000 engineers in various fields for the purpose of finding out the essentials for success in the engineering professions brought the following results. On the basis of 100 points the average opinion of the engineering men is that character counts 24, judgment 19.5, efficiency 16.5, understanding of men 15, knowledge of fundamentals 15, technique 10. In other words, the value of a man as an engineer is 75 per cent due to human qualities and only 25 per cent to acquired knowledge.

It seems to us not exactly correct to say that one of these qualities is more effectively important than another any more than to say the boiler plate, the tubes or the rivets should be considered the most important part of a boiler.

This is but another instance of the composite nature of success. We all know men who rank high in the "human" qualities mentioned, but still remain in relatively small positions because they lack the means or power of giving expression and effect to their natural ability. On the other hand there are many who have had every advantage of education and training in technique who are well characterized as "sticks." They are hard, stiff, unbending, and while they may be straight they fail to fit in with men as men. The two classes of qualities must go together and we believe that every item in the list is susceptible of being trained, partly by teachers and books, but more effectively by self-discipline and mixing with men.

The fundamental education for the successful engineer, then, is the general training that develops character, co-operation with one's fellows, appreciation of civil obligations and social responsibilities. On such a foundation is built a truly efficient technical education, whether in high school, evening school or engineering college. Without such a foundation in character we are sure to have a lop-sided structure in many cases. Hence the need for a more carefully planned curriculum than most of our schools can now boast of. More attention must be paid to these "human" qualities. There must be something in the way of character to build on, of course, but it is easier to introduce the habit of right conduct in school days than to wait till the ground is full of weeds. It is harder to accomplish this in time when so-called technical education is usually broken.

Technical education and manual training are highly important to the proper equipment of the effective citizen, but let us not forget or neglect the more important training of the mind and character that makes for the perfection of the conscientious citizen, whether man or woman, workman or employer, banker or clerk, railroad man or member of Parliament.

#### WHERE IS WALTER CLIFFORD?

Any information regarding the address of Mr. Walter Clifford will be greatly appreciated by a reader of this magazine. Our correspondent says he was recently employed at Gargie, U.S.A., which may mean Garfield, N.J.

#### COBWEBS.

It is understood that Wayagamaek is intending to install a second set of machines. If this is a result of the rosy report of opportunities in England recently brought back by Mr. Hodge, of the concern which represents the big kraft mill over there, we may confidently expect to see similar action by other progressive concerns.

Canadians can truly sympathize with the French in their trouble with the forest fires that are raging in the vicinity of Toulon.

The Government is to be congratulated for establishing a Federal Department of Public Health. Health and education are matters that have not received at Ottawa the attention they deserve. An effective ministry will be a blessing to the whole country.

There is nothing especially consoling to shippers in the announcement that British control of ocean rates has been relaxed. While it is only fair that British owners have the opportunity as neutral carriers, who have enjoyed as much as 55s per ton while Englishmen were limited to 47s 6d, the difference may have a weighty effect on the ability of some industry to export goods at a profit.

"The Malay peninsula is now supplying more than two-thirds of the world's tin." What becomes of it all?

A friend (?) has picked on us for using the heading in a recent number, "Bahr Brothers Began as Boys." We are informed that this expression is absolutely correct.

Isn't it surprising what a wide interest in the pulp and paper industry is taken by the Canadian press? Hardly an issue is printed without some reference to a particular mill or the industry in general. Too bad the management is not always as cordial as the editor.

# Notes on the Cooking and Washing of Rags

By E. Arnould.

(Translated from *Le Papier*, 22, May, 1919, for the Pulp and Paper Magazine, by A. Papineau-Couture.

In the manufacture of fine and semi-fine papers the preliminary treatment of the rags is of the utmost importance. The treatment should be varied according to the properties of the rags and those desired in the pulp, and should not be uniform for all kinds of rags, as is too often the case. The proper sorting and cooking of the rags reveals the knowledge and experience of the paper manufacturer.

The purpose of the treatment of the rags is to free them of all impurities, which consist of dyes, incrusting matter from the plants, fatty, albuminoid and pectose matters, gums, starches, and dirt. By means of a properly conducted treatment, pulps are obtained which have retained the original strength of the fiber, or on the other hand, which are very pure and have the desired softness. In all cases an efficient cooking greatly facilitates proper shredding, washing, bleaching and refining, so as to give a strong, smooth, unshrivelled paper.

However, an intimate knowledge of the manufacture of papers enables me to say that some rags do not have to be treated; but these are exceptional cases, and the stock obtained from them is not very pure, nor can it be bleached, coloured, or sized well. They are:—white linen or cotton rags which have been subjected to repeated launderings or bleachings with Javel water or in which there has been a certain consumption of the fiber due to constant exposure to air and light; rags having a decided colour, such as black, blue, red, etc., which may be used for coloured papers; new white starched cotton clippings which are used for parchment paper for deeds, bank-notes, etc., and which are nearly always resized with gelatine.

The stocks from these untreated rags hinder the proper sizing with rosin, because the fibers are not bare but are covered with various impurities which prevent them from having the required affinity for the size, which consequently does not adhere and does not penetrate into the cells and stay there after the usual chemical precipitation.

Hard flax and hemp rags, bleached or unbleached thread-waste, flax or hemp tow, cordage, and twine, must be subjected to a treatment suited to their hardness, the nature of the incrusting matter to be eliminated, their cleanliness, and the kind of paper for which they are to be used.

It is a great mistake, which is but too often made, to give a mild treatment in order to obtain a stronger or more resistant pulp. Properly cooked rags are more easily washed and require less power in shredding; the fibers are more easily loosened and separated; they are more easily and economically bleached; the refining is easier; and the fibers are longer and their physical structure less impaired. It may seem paradoxical to say that paper made from rags having been subjected to an energetic treatment is stronger than if the rags have only had a mild treatment, but

it is true nevertheless. Our conviction is based on 30 years' experience during 12 of which we used all the hardest kinds of rags, including flax and hemp tow. No competent authority can deny that pulps prepared from hard, improperly cooked rags are hard to bleach, do not refine properly when mixed with other stock, do not pass through the screens, cause improper felting of the stock of the machine, and greatly decrease the transverse strength of the paper.

Having decided on the proper method of cooking, it should be noted that there are three factors to be taken into consideration:—

- 1.—The amount of alkali per 100 kilos of rags.
- 2.—The increase in temperature in the digester.
- 3.—The time of cooking.

Every manufacturer should determine beforehand the relative importance of these factors, taking into consideration the needs and resources of the mill, and the greater or less ease of obtaining supplies; coal, lime, soda ash, caustic, etc.

As a rule, treatment with lime alone under a pressure of 4 to 4½ kilos\* (53 to 60 lbs.) decolorizes the rags, frees them from incrusting matter, destroys traces of wool, and softens the stalks.

Soda ash removes the grease, and also the incrusting matter by dissolving albuminoid and pectose matter, gums, etc.

The action of caustic soda is the most energetic, owing to the more complete saponification of the substances to be removed from the rags. But it should be used only when other means would not give the desired results, as it acts on the fibers, is hard on the digesters, and often causes dangerous burns to the workmen.

No matter what alkali is used, it should have a high test.

The selection of lime must be carefully made, as it should have a high percentage of available CaO and be relatively white. Where supplies must be laid in for some time ahead, certain precautions must be observed. When exposed to a moist atmosphere, it becomes air-slaked and crumbles, the available CaO falls off, and there is considerable loss. It may be kept in barrels for several weeks if stored in a dark, dry place. If such a place is not available, it is advisable to slake it in brick or concrete tanks and to protect it from the air by a sufficiently deep layer of water.

I shall not go into the precautions to be taken in the preparation of the liquor, though they largely influence the cleanliness of the stock.

When the cooking is finished in the rotary digester, the pressure must be allowed to fall, the liquor drawn off, and the stock washed. The steam is usually turned off about three hours before the end of the cook, so that at the end it is generally under about 1.5 kilos (20 lbs.) pressure. This steam must now be removed and the stock freed from the boiling alkaline liquor, which holds in solution much insoluble matter which should be separated at a sufficiently high temperature

\* 1 kilo per sq. cm. = 13.25 lbs. per sq. in. Translator's Note.

to prevent its precipitation on the rags. In many mills, after the steam has been relieved, the cover is removed and the contents of the digester, both liquor and stock, dumped on perforated plates. Part of the liquor drains through the plates and the remainder stays in the stock. The sudden cooling reprecipitates on the rags the impurities which were dissolved in hot liquor, thereby defeating the object of the treatment. Washing in clean cold water does not dissolve out these reprecipitated impurities, and the harm is done.

The stages of the process should be quite distinct and are as follows:—

- 1.—Charging the digester;
- 2.—Introducing the liquor;
- 3.—Adjusting the water level in the digester;
- 4.—Putting under pressure;
- 5.—Time of cooking;
- 6.—Turning off the steam;
- 7.—Allowing the steam pressure to drop;
- 8.—Relieving the steam;
- 9.—Removal of the hot liquor by progressive dilution;
- 10.—Washing the cooked rags;
- 11.—Dumping the stock.

The most rational method of washing would be by means of hot water, in the digester; but this would be too expensive. The following method is quite practical and gives good results:—

The digester should be provided with a large cast iron cock, about 150-180 mm. in cross-section, placed opposite the charging-hole so as to counter-balance the weight of the cover. At the end of the cook the digester is stopped with the tap uppermost, and the remaining steam is relieved. The digester is then about two-thirds full of boiling liquor. It is then started up again, with the tap still open, and cold water is introduced through the trunion. The liquor escapes each time the tap is below the level of the liquid in the digester, and at the same time it is slowly diluted by the cold water. In 20 to 25 minutes the liquor is all discharged, and washing is continued with fresh water until it comes out perfectly clear. The agitation of the stock caused by the rotation of the digester ensures a very thorough washing. The cover is then removed and the stock dumped.

Should it be impossible to fit the digester with the large tap above-mentioned, the usual cover-plate may be replaced by one suitably perforated.

#### CONDITION OF FRENCH PAPER INDUSTRY

Opinion varies as to the state of the French paper industry at present and its immediate prospects.

"The paper industry in France is in a better condition than most other industries," said Lieutenant William T. Harrison, Jr. vice-president of the William T. Harrison Paper Company, St. Louis, returned recently to St. Louis after ten months' service in France.

"Here we are at the end of the world cataclysm which paralyzed the French paper industry in particular," writes a correspondent of *Le Papier*. "A few mills have continued to make, although in an interrupted fashion, a fair imitation of their usual grades of paper.

"The reasons at work in causing this defective progress are: The lack of hands and scarcity of raw materials of all kinds; the failure, no less vital, of secondary materials, loading, sizing, bleaching, as well as dyestuffs and fuel."

#### HODGE ON KRAFT MARKET IN ENGLAND.

W. S. Hodge, who is in charge of the London office of the Hodge, Sheriff Paper Co. of Toronto, in discussing pulp and paper opportunities in Britain, makes known the intentions of his company. Everything is being done to develop the market in England for Canadian kraft as turned out by the Wayagannaek company, for which his firm is selling agent.

Mr. Hodge believes that the opportunities for Canadian business in Great Britain are going to be considerable, seeing that the regulations are now so favorable. And he does not see why they should be less favorable in the future. He believes that the existing concessions will probably develop into some differential tariff basis, cutting out the licenses and allowing a tariff to take their place.

"That seems to be the only thing to do," he remarked. "The whole necessity is to provide work for the British workingman. This is going to be a high-priced country.

"There will not be much difference in the cost of production between Scandinavian and Canadian pulp and paper. Our only handicap then will be the geographical position, and I should imagine they will eventually subsidize boats using the mouth of the St. Lawrence River.

"I think importers in Australia and New Zealand and the South American republics, who temporarily left the British exporters because they could get nothing through, will eventually drift back into the old channels. People in the United States generally are not export efficient. There are, of course, a few efficient exporters dealing with things they are particularly cut out to handle, such as automobiles and typewriters, but there are a large majority of United States manufacturers who are indifferent and amateurish in the way they conduct export business. They have such a huge home market, and live under such high protection that they only look to export business during depressed periods, and then they generally handle it indifferently with regard to packing, financial arrangements and so on."

The export of paper to Australia was regarded by Mr. Hodge as abnormal. The Canadian mills can only compete in about three lines under present conditions. One is newsprint, another box board and a third kraft paper. The fault seems to be that there are small mills trying to make a large number of qualities, which means small runs. One company was mentioned which made 25 different qualities of writing and printing paper. Mr. Hodge stated that he used to import Olive and Partington Paper into Canada, and undersell Canadian manufacturers on their own ground.

"We are exclusively bringing over Canadian kraft paper, both glazed and M. G. qualities, and eventually we shall be bringing over some suboate kraft pulp. Up to the present we have shipped all our pulp to the United States market, because we have been able to ship it wet, but we are immediately arranging to dry our pulp so as to be able to approach the English consumers."

#### U. S. TO GET DYES FROM GERMANY.

Washington, Sept. 2.—Importation of a six months' supply of dyes from Germany for American manufacturers will be allowed under a ruling announced today by the War Trade Board. Manufacturers have been requested to file statements with the board showing the total quantities of dyes needed for the six months, beginning October 1st.

# Pulpwood Consumption and Wood Pulp Production in 1918

The following observations and data are taken from a recent bulletin published by the Forest Services of the U. S. Department of Agriculture under the direction of Col. Henry S. Graves, in co-operation with the News Print Services Bureau. The bulletin contains 15 valuable tables. Copies were distributed at the meeting of the Bureau in Montreal last month.

Points to be noted are: the rapid growth of the sulphate pulp industry, in spite of a general reduction in pulp output; the marked increase in cost of wood; 10 per cent of the mechanical pulp was steamed and 13 per cent of the sulphate was bleached; production increased in only two important producing states; imports of pulpwood, practically all from Canada, increased 33 per cent in 1918 over 1917; imports of newsprint increased more than 10-fold in nine years:

## Introduction.

Detailed statistics on pulpwood consumption and wood pulp production in the United States during 1918 are contained in this bulletin. Directly comparable data are given in the bulletins for 1917 and 1916. Statistics have been published by the Forest Service for 1905, by the Forest Service in co-operation with the Bureau of the Census for the period 1906-1911, and by the Bureau of the Census, in connection with the census of manufactures, for 1914.

The co-operation of the News Print Service Bureau in the collection and compilation of the statistics was continued in 1918 as in former years.

The completeness and heartiness of the support of the industry in furnishing reports is evidenced by the fact that an estimate had to be made for but one firm in the entire country.

*Note.*—Acknowledgement is made for assistance in the collection and compilation of the statistics and in the review of the report to R. S. Kellogg, Secretary of the News Print Service Bureau, and Albert H. Pierson, of the Forest Service.

## Pulpwood Consumption and Wood Pulp Production, 1918.

The consumption of pulp wood by 250 establishments in 1918 was 5,250,794 cords (a cord equals 128 cubic feet). The total includes an estimated utilization of 218,000 cords by one establishment in New Hampshire. The 1918 figures show a decrease in consumption of 4 per cent in comparison with 1917, and an increase of less than 1 per cent over 1916.

Wood pulp production aggregated 3,313,861 tons, a decrease in production of 6 per cent from 1917 and 4 per cent from 1916. The quantity shown includes an estimate of 140,000 tons for one establishment in New Hampshire. Of the total quantity of pulp manufactured in 1918, 41 per cent (1,364,504 tons) was made by the mechanical process, 44 per cent (1,456,633 tons) by the sulphite process, 11 per cent (350,362 tons) by the soda process, and 4 per cent (142,362 tons) by the sulphate process. The quantity of mechanical pulp produced was 11 per cent and that of soda pulp 20 per cent under that of 1917. The output of sulphite pulp was approximately 1 per cent and that of sulphate pulp 68 per cent more than for the year before.

Operating conditions in the industry for the first ten months of the year were largely of the restrictive character of those prevailing in 1917. Difficulty was experienced in getting adequate stocks of pulpwood and

in transporting it, in securing supplies of necessary materials, because of diversion or scarcity in the movement of incoming and out-going freight, and, particularly, in the matter of labor. These conditions were all incident to the war activities of the country. The demand for pulp continued undiminished during the year and, outside of the ordinary channels of consumption, further utilization of pulp took place for strictly war purposes. Imports of wood pulp were approximately 100,000 tons less than for either one of the two preceding years.

## Pulpwood Consumption.

Statistics on the consumption of pulpwood, by kinds of wood, for four calendar years, 1909, 1916, 1917, and 1918, are presented in a table. Consumption was slightly less than in 1917 as a result, in part, of the non-operation of several mills. Total importations of spruce and poplar varied little from the figures for other years, and the relative importance of the various species utilized remained practically unchanged. The increased use of hardwoods—beech, birch, maple, and chestnut—shown in 1917 over 1916 was still further added to in 1918.

In Maine, New York, Pennsylvania, and New Hampshire, four of the five States leading in the quantity of pulpwood consumed, the figures for 1918 show a decline from the preceding year, ranging from 5 per cent in New York to 17 per cent in New Hampshire. In Wisconsin, the remaining one of the five leading States, the increase amounted to about 7 per cent. In all of the other States for which figures are shown separately, with the exception of Michigan and North Carolina, decreased use is evident.

## Annual Wood Consumption and Cost.

Consumption figures on pulpwood, together with the total annual cost, are shown in tabular form for those years of the period 1899 to 1918 for which statistics are available.

The story of the almost uninterrupted growth of the industry is told in the tabulation. The average cost per cord figures out \$4.95 for 1899, \$8.62 for 1909, and \$13.93 for 1918—and these mounting costs are of much significance in connection with the economies of the industry.

## Consumption of Wood by Species and States.

Detailed figures on the consumption of pulpwood, by species, for the several states are given. It is not permissible to print the figures for certain states other than in group form because the operations of individual firms would thus be revealed. Spruce forms 55 per cent, hemlock 16 per cent, balsam fir 7 per cent, and poplar 6 per cent—a total of 84 per cent—of all the wood used. The relation of each of the woods quoted to the aggregate consumed differ little from that in the immediately preceding years.

The reported use of slabs and other mill waste declined from 233,982 cords in 1917 to 154,603 cords in 1918.

It may be assumed that an increased utilization of some of the minor species, where they are available, will naturally follow the upward trend of pulpwood values.

## Consumption of Wood by Processes of Manufacture.

Pulpwood consumption by kind of wood entering into the several processes of manufacture is detailed in the form of a table. Of the 5,250,794 cords going into the

making of pulp, 25 per cent was utilized in the production of ground wood pulp, 10 per cent in sulphite, 11 per cent in soda, and 4 per cent in sulphate. The converters enter largely into the production of mechanical and sulphite pulps, while 70 per cent of the wood used in soda, sulphate and sulphite processes is hardwood.

#### Average and Total Costs of Wood

In a table in another Maine just beats New York for amount of wood consumed, are given by States comparative figures for 1909 and 1916 to 1918, inclusive, of the number of establishments reporting, the quantity, average cost and total cost each mill, and the number of tons of wood pulp produced. The figures for 1916, 1917, and 1918 are directly comparable, having been gathered by one agency under similar conditions; the data for 1909 were provided to permit of a ready comprehension of the changes since that period.

The reports for 1918 are for 250 establishments as against 246 in 1917 and 235 in 1916. In 1909, 253 establishments operated. Comparative figures indicate that the number of new mills put in operation during the last few years has not offset those which have shut down permanently.

Attention is directed to the increase in the average cost per cord of wood, as shown in the table, as between 1916 and 1918. In 1917 the average cost jumped from the 1916 average of \$8.76 to \$11.10, or 27 per cent. An advance of \$2.83, from \$11.10 to \$13.93, or 25 per cent took place from 1917 to 1918. Wood costs, in other words, have gone up nearly 60 per cent in the last three years.

Emphasis is laid upon the fact that the average cost per cord is computed from the figures reported by mills operating under conditions both general and peculiar to themselves and which preclude their costs' being directly comparable. This fact should be considered in using the average cost per cord in any computation or deduction. The increase in cost per cord over 1917 amounted to 37 per cent in Maine, 24 per cent in New York, 13 per cent in Wisconsin, 3 per cent in Pennsylvania, and 31 per cent in New Hampshire.

#### Range of Pulpwood Prices.

A more comprehensive presentation of pulpwood costs is made in a table, wherein is shown the range in price, number of mills, and form in which purchased—whether rough, peeled, or rossed, or in the form of slabs and other waste. For the bulk of the rough wood approximately \$11 to \$12 was paid; for peeled wood, \$15 to \$16; for rossed wood, \$20 to \$21; and for slabs, \$8 to \$9 per cord. The table shows pulpwood costs ranging between \$3 and \$31 per cord, which emphasizes the fact that a great diversity exists in operating factors.

#### Quantity and Cost of Wood by Condition.

Of the aggregate quantity of wood consumed by the mills, 47 per cent was bought in the rough, 46 per cent peeled, and 7 per cent rossed. These figures are also given in by States. The average cost per cord reported for rough wood was \$11.78. The added preparation given the wood adds to its value, so that for peeled wood the average cost was \$15.18, and for rossed wood \$20.07.

In another table are shown the same data as given in the preceding table, averaged by species, instead of States. Of the quantities shown, 50 per cent is delivered in the rough, 42 per cent peeled, of the imported 29 per cent in the rough, 29 per cent peeled and 22 per cent rossed. The average cost for spruce is rough and 4 per cent peeled, and for balsam fir 41 per cent is rough, 14 per cent peeled, and 15 per cent rossed. With the exception of tamarack, all of which is rough, the species are principally peeled.

#### Wood Pulp Production.

Figures are given in a table on wood pulp production as much detail as is practicable without revealing the operations of individual mills. The reported aggregate output was 3,313,861 tons (short ton equals 2,000 lbs.), of which 41 per cent was mechanical, 11 per cent sulphite, 11 per cent soda, and 4 per cent sulphate. The 1918 output of pulp was 4 per cent less than that in 1917. The production of ground wood pulp was 11 per cent and that of soda pulp 20 per cent under that of 1917. Sulphate pulp production was greater by 68 per cent and that of sulphite by less than 1 per cent than in 1917. The increased sulphate production was not confined to any one State, but was a general condition participated in by practically all of the mills turning out sulphate. Of the mechanical pulp manufactured 90 per cent was not steamed and 10 per cent was steamed. Of the sulphite pulp, 62 per cent was unbleached and 38 per cent bleached; in soda pulp 8 per cent was unbleached and 92 per cent bleached; in sulphate pulp 87 per cent was unbleached and 13 per cent bleached.

Maine, New York, Wisconsin, New Hampshire, and Pennsylvania are the leading States in pulp production in the order given. In the five States named 76 per cent of the country's total output of wood pulp was manufactured in 1918.

In but two of the larger States did the production of pulp exceed that of 1917. Wisconsin with a 4 per cent and Michigan with a 15 per cent increase. The increase among the States grouped as "all other" amounted to 12 per cent. The losses in production range from 3 per cent in Maine to 21 per cent in the northwest group of States—California, Oregon, and Washington. The decrease in volume in New Hampshire was 11 per cent, Vermont 12 per cent, West Virginia 13 per cent, Minnesota 14 per cent, and North Carolina 17 per cent.

The average value f.o.b. mill for all wood pulp produced is \$52.68 per ton, an increase of \$9.35 per ton, or 22 per cent over 1917. The average figure was computed from reports covering the production of approximately 90 per cent of the aggregate output for the year. The value of mechanical pulp given is 17 per cent, sulphite pulp 21 per cent, soda pulp 18 per cent, and sulphate pulp 43 per cent above that reported for 1917.

A table has been added to this year's bulletin in order that the production of wood pulp for such years as statistics are available may be shown. Pulp manufacture increased 80 per cent in the 10-year period 1899-1908, and 33 per cent in the 10-year period 1909-1918.

#### Imports and Exports of Pulpwood, Wood Pulp and Paper.

Tables 11 to 15, inclusive, are transcripts of statistics compiled by the Department of Commerce and are of importance in connection with this report because of their showing of the annual imports of pulpwood, and the imports and exports of wood pulp and paper. Revised classifications effected during the periods covered by the tables account for the omissions and regroupings.

The annual imports of pulpwood for the last nine years are shown in another table. The imports for 1918 were larger than for any other one of the years shown, and were 33 per cent in excess of the 1917 imports. The quantities given do not correspond with the figures in preceding tables of this report showing the volume of imported woods consumed; the Forest Service data are for spruce and poplar alone and the quantity of other species which are imported is not recorded. Much wood is carried over in storage from year to year, so that further discrepancies may occur. The average



value per cord advanced \$1.45, 17 per cent to \$9.75 in 1918, adding nearly \$5,000,000 to the cost of pulpwood for the year. Practically all of the pulpwood is imported from Canada.

The aggregate imports of wood pulp in 1918 were smaller than in either 1917 or 1916—the decrease as between 1918 and 1917 amounting to 15 per cent. The decline in imports was due principally to the lessened quantity of ground wood pulp brought in; in 1917 the imports were 249,172 tons, compared with 165,605 tons in 1918. The average value of imports per ton was \$60.97, a drop of \$8.39, or 12 per cent, from the previous year. The average value is practically double that of the pre-war period.

Wood pulp exports slumped nearly 15,000 tons, or 42 per cent, below the 1917 record, and the quantity more nearly approaches the normal figures for before the war. The average value per ton for all exports was \$85.91, representing a difference of \$13.37, or 13 per cent, below the year before.

A substantial gain of approximately 74,000,000 pounds or 7 per cent, took place in news print paper imports in 1918 over the preceding year. The increase in 1917 over 1916 was 19 per cent. In 9 years, 1910 to 1918, imports have gone from 113,000,000 pounds to 1,193,000,000 pounds. The average value per pound of imported news print advanced from 2.76 cents to 2.94 cents. The quantity of all other printing paper imported was 182,995 pounds; in 1917 the imports were 412,091 pounds. Imports of wrapping paper increased 19 per cent. The value of all other paper imported decreased 30 per cent.

Exports of all kinds of paper were larger in 1918 than during the year before. The exports of news print were 193,479,180 pounds, 3 per cent more than for 1917. The average value per pound of the news print exported is 4.13 cents. The quantity of all other printing paper exported was 99,218,916 pounds, an increase of 5 per cent over 1917; the exports of wrapping paper were 59,899,043 pounds, an increase of 14 per cent. The value of all other paper exported was more by 23 per cent than the year before.

#### CANADIAN PAPER TRADE ANNUAL.

The annual meeting of the Canadian Paper Trade Association will be held at the Ritz-Carlton Hotel.

A large and representative attendance is expected Montreal, on Tuesday and Wednesday, Sept. 16 and 17, from all the leading cities in Canada and important business is to be transacted. Officers will be elected for the coming year, as well as reports of an interesting character presented. W. C. Ridgway, of New York, secretary of the National Paper Trade Association, will be present and deliver an address.

The book and writing section, the coated paper section, and the wrapping paper section of the Canadian Pulp & Paper Association will meet at the same time as the Canadian Paper Trade Association. Important subjects between the manufacturers of the various lines of paper and the jobbers are to be taken up.

It is expected that further advances will be made in the line of co-operation and good feeling between the two bodies, which have been brought about by the Canadian Paper Trade Association.

The present officers are John F. Ellis, Toronto, president; John Martin, Winnipeg, vice-president; H. B. Donovan, Montreal, second vice-president; E. S. Munroe, Toronto, treasurer and N. L. Martin, Toronto, secretary.

#### ITALIANS ANTICIPATE TRADE WITH CANADA.

Although unfavorable freight rates and other shipping conditions may interfere, it is pleasing to know the cordial feeling in Italy toward Canadian products. The following extracts from a letter from Ing. L. Burgo, one of the largest manufacturers of news and wrappings in Italy, indicate the market for pulp and the attitude of the mills.

"In regard to pulp the home production may be considered negligible compared with the quantity used in this country; we get our supply mostly from Scandinavian countries, formerly a portion came from Austria.

Practically all the pulp required in Italy is now imported through a Consortium of Italian paper-makers of which the writer is the President; the sulphite pulps are mostly in demand, both bleached and strong. The average yearly imports before the war are figured in 90,000 tons.

We have ourselves considered the opportunity of obtaining pulp from your country and you may perhaps have noticed our inquiries from the Department of Trade and Commerce in Ottawa, which your Magazine kindly reported in its issue of May 1st; we do believe that at some future time we will find convenient to get a portion of our pulp supply from Canada and we are looking toward such an opportunity.

Just at the present time however, beside transportation difficulties we have to contend with the skyward trend of the dollar, as compared with other foreign money.

We intend to take up this proposition in due time through our Consortium and we thus anticipate a strengthening of the commercial relations between the two countries with mutual advantage."

#### EXPORTS 2½ MILLIONS BEHIND.

June exports of paper, pulp and pulpwood from Canada, totaled in value, \$7,345,851, as compared with \$9,120,262 in June last year. Paper shows a gain of \$153,538 and mechanically ground pulp of \$295,818 while chemically prepared pulp fell off \$1,105,652 and unmanufactured pulpwood, \$1,118,114. The details:—

Month of June	1918	1919
Paper and mfs of . . . . .	\$3,970,988	\$4,124,526
Wood, pulp chem. . . . .	2,918,671	1,813,018
Wood pulp mech. . . . .	324,163	619,981
	\$7,213,822	\$6,557,525
Pulpwood . . . . .	1,906,440	788,326
	\$9,120,262	\$7,345,851

Exports for the first three months of the fiscal year, show a decrease of \$2,478,375 compared with last year and a gain of \$4,702,547 compared with 1917, as follows:—

Three months.	1917	1918	1919
Paper . . . . .	\$ 8,362,046	\$10,855,869	\$12,893,184
Pulp, chem. . . . .	5,047,629	7,764,909	5,249,293
Pulp mech. . . . .	1,602,271	1,241,905	1,194,597
	\$15,011,946	\$19,862,793	\$19,337,074
Pulpwood . . . . .	1,648,295	3,978,370	2,025,714
Total . . . . .	\$16,660,241	\$23,841,163	\$21,362,788

It takes only a moment of carelessness to cause a lifetime of suffering.

## British Trade News

London, Aug. 24, 1919. Industrial troubles are for the present at an end, but on the horizon there are signs of some discontent on the railroads, as regards wages, and if this discontent should develop into a cessation of work, the transport of pulp and paper once more becomes dislocated. As I write there are no signs of a stoppage, but in these days one never knows what the next twenty-four hours have in store for the millowner. In the paper mills there is a gradual conversion to the three-shift system. It is slowly being introduced and from a worker's point of view gives a certain amount of satisfaction. Indeed, the tendency throughout the United Kingdom is to push for the 8-hour shift, with an increase of wages to meet the high cost of living. The coal strike having ended and the paper mill workers having been satisfied, mills are now pretty busy on export and home account, and newsprint is finding a lively demand in consuming channels. It only remains now for the railroad people to settle down and the Minister for Transport to speed up the delivery of paper and pulp across the various systems from producer to consumer.

The shipment of reel paper from Newfoundland is a remarkable feature of the imports. Up to July 31 the total reached 9,993 tons for the seven months, compared with 241 tons for the same period last year, and it must be remembered that shipping was not an easy problem in January and February last. The paper is suitable for the London machinery which is run very fast. There is a great movement on amongst daily and evening papers throughout the country to secure a nice white sheet and amongst the reading matter to insert small illustrations of events of the day. This entails technical skill and indirectly the papermakers play an important part. In the first place the newsprint must be capable of standing a fast running machine and take a good impression. Secondly the photographic paper has to be of the best quality, and capable of standing the test of time in the newspaper museum, as well as standing the operations of the photographic printer. Some firms get through £60 worth of photographic paper in a week, not counting a special gummed art paper that is used for placing on the back of the photographic paper giving a description of the illustration or subject. During the past two weeks I have been looking into this side of the paper industry and I find America is giving it close attention. The Canadian newsprint, as far as I can ascertain, is spoken well of; but there are complaints against the gummed art paper which only needs a little adjustment from the chemist of the mill. The consumption of photographic paper in the United Kingdom is gradually increasing and the market should not be lost sight of.

The export trade of the British mills is on the increase and France is purchasing very freely. For the seven months ending July, 1,131 tons of writing paper, 2,630 tons of printing paper and 748 tons of unenumerated papers. The Colonies are also taking a good share and Canada, as may be expected, occupies a small place in the exports. The shipping of paper to the Dominion for the past seven months was as follows: Writing paper 100 cwts. (as against 231 cwts.); printing paper, 100 cwts. (as against 165 cwts.); as against 601 cwts) and other classes of papers 717 cwts. as compared with 1,542 cwts. being the same period in 1918.

The demand for sulphite is good and there is every indication of prices hardening, easy bleaching being quoted within the range of £24 12s 6d. and £25 15s, and news about £22 10s to £24 10s per ton c.i.f., etc. Wet mechanical is firm and the demand steady. In the chemical market there is a fair volume of business passing—76 p.e. caustic soda is £24 per ton; 70-72 p.e. £22; 60-62 p.e. £19 per ton. Alkali ranges from £6 to £6 5s (for ammonia) and bleaching powder stands at £14 to £15 a ton, f.o.b. Esparto prices f.o.b. shipping ports are: Oran fair to good, £4 5s to £4 10s per ton; Oran No. 1 quality, £4 15s to £5 5s per ton. The supply of Spanish is limited. China clay is firm on the recent advanced prices. Before the war Germany did a good trade with England in china clay. There is a strong feeling against the resumption of this trade again, but the outcome of recent German inquiries for the mineral is being watched with interest. The United States also purchased freely in the Cornish pits.

According to latest advices in London the German dye industry is in as strong a position as ever, if not stronger. The new Government has given the industry a kick-off with a good substantial grant and since the armistice several new factories have been run up with reinforced concrete—a material in which Germans have excelled since 1914 and are noted for the rapidity with which they handle it in the construction of works. Germans are already sending inquiries to England about new business and the resumption of business; but in the paper industry I would like to see Canada getting a firmer hold on the market here before German competition sets in. Dyes and paper the Germans are after and judging by the letters that are reaching London they will leave no stone unturned to recapture what they have lost by the war.

Notwithstanding the war and the shortage of labor some of the British paper mills have done very well. St. Neots Paper Mill Company are paying a good percentage and are increasing their capital from £30,000 to £75,000 by the creation of 9,000 new shares at £5 each. The North of Ireland Paper Mills have declared an interim dividend of 7½ per cent, and Brown, Stewart & Co., Ltd., a dividend at the rate of 10 per cent for the year, which is the same for the past two years, which is the same for the past two years. William Nash, Ltd., of St. Paul's Cray, Kent, are registered with a capital of £100,000.

Publishers of English and Scottish newspapers are increasing the sizes of their papers. This means more newsprint. Newspapers and periodicals are daily coming into existence. Even the Foreign Office has started on publishing a series of foreign papers—papers containing the principal news from foreign countries. These are divided into different services, such as the German, Scandinavian, and so on.

The paper tube workers are still on strike. The difficulty is over an increase of wages.

Laverstoke Paper Mills, in Hampshire, belonging to Messrs. Portal celebrated their 200th birthday. Sir William Portal received a handsome presentation and the workers a substantial dinner.

Profiteering is to be put down with a vengeance in England. Papermakers say they find it hard enough to make a small profit themselves owing to the high cost of production.

Lloyd George, the Prime Minister, unlocked the box containing his trade speech in the House of Commons. There was nothing in it. Labor is disgusted with it and the majority of the press say it was poor oratory.

## Paper Makers Now Know Price of Product Last Year

The decision of the Paper Control Tribunal on the appeals from Paper Controller Pringle's price-fixing order of September 26, 1918, reducing the price of newsprint paper sold in Canada between July 1 and December 1 last year from \$69 to \$66 a ton, caused no undue excitement in paper trade circles in Montreal, although admittedly a disappointment to the manufacturers.

It was known that when the court refused to accept evidence as to costs covering December and January, which were high cost months, holding that they were not at the time dealing with those months, and restricted the manufacturers to making their case on the costs for a period including July, August and September, the lowest cost months of the year, the manufacturers were placed at a considerable disadvantage. They claim that the costs for December, January and February, if they had been taken into consideration, would have justified a considerably higher price than that fixed by the controller or allowed by the court.

"The Tribunal's ruling applies merely to paper sold during the five months from July to November, 1918, inclusive," said a paper man in discussing the decision. "The price remains at \$69 for the intervening period to date. It will so remain until and unless varied by subsequent rulings by the judges. These can only be made after further hearings have been had on appeals now pending in regard to the price as applied to this later period.

"The manufacturers are confident that the higher costs which have ruled since last November will more than justify the price of \$69. In fact, they contend that any subsequent revision that may be made is more apt to be a revision upward than downward."

This presumption, they say, is borne out in part by the statement of Judge Archer, one of the three judges who passed upon the appeal, and who says that he would have supported judgment allowing \$66 a ton for the months of July, August and September and \$69 a ton for the months of October and November.

The press report dealing with the decision mentions the fact that the manufacturers contended for a price of \$80 a ton. On the other hand the publishers, both before the controller and the Tribunal, contended that \$50 a ton was a fair maximum price, their brief stating that "at \$50 per ton for roll news the highest cost company will receive a profit slightly in excess and the lower cost companies a profit considerably in excess of any profit shown by the evidence to have been received by any company prior to the investigation." By the judgment rendered, therefore, the manufacturers fall short \$14 a ton of achieving their extreme demands, while the publishers fail by \$16 a ton to get the price asked by them.

### Terms of Judgment.

The following is the text of the judgment:

"The appeals of the manufacturers and of the publishers from the order of the Paper Controller, made on the 26th of September, 1918, having come on to be heard before the tribunal and we, having by our order of the 23rd January, 1919, referred the matter back to the controller to take further evidence and to state what change, if any, should be made in the price fixed by the said order in view of such evidence, and he having, by his report, made, on the 27th May last,

found that no change should be made, the hearing of this appeal was then resumed in the presence of Council for all parties.

"We find and determine that the price of newsprint paper within the Dominion of Canada in carload, in rolls, shall be \$3.30 per hundred pounds, \$3.37½ in less than carload lots. Sheet news, \$3.65 in carload lots, \$3.77½ in lots (less than carload lots), of two tons and over, all to be f.o.b. mills. This price to prevail from first July, 1918, to 30th November, 1918.

"In arriving at this price we have considered all the evidence adduced both upon the original hearing and given before us, and upon the reference back, and have not dealt with the matter as an appeal only.

"We make no difference as to the price payable to the Fort Frances Pulp and Paper Company, as the Government has granted a refund on sulphite imported. "Save as varied by this order, the provisions of the order of the controller are to stand.

### Must Repay Excess.

"Any purchaser of paper who has paid on the footing of the prices fixed by the controller may apply to him for an order directing a refund of the excess paid."

This judgment is signed by three members of the tribunal, and under the heading of "remarks made by the Honorable Justice Archer" appears the following: "Without entering a formal dissent, I deem it advisable to say that I would have supported a judgment allowing \$66 per ton for the months of July, August and September, and \$69 a ton for October and November, 1918." This is signed by Mr. Justice Archer.

### Fort Frances Phase.

The judgment on the appeals in respect of differentials payable to the Fort Frances Company follows:

"The appeal of the manufacturers from the order of the Paper Controller, dated the 6th August, 1918, in respect of differentials payable to the Fort Frances Pulp and Paper Company, Limited, having come on to be heard before us in presence of counsel for all parties.

"We do this day adjudge and determine that the said order so far as it directs to be paid to the Fort Frances Pulp and Paper Company, Limited, by the several manufacturers therein named, the several sums thereby specified for or in respect of differential, for the months of March, April, May, June, July, August, September, October, November and December, in the year of 1917, totalling (including interest), in said order, the sum of \$100,797.71, be varied so that the total amount which the said Fort Frances Pulp and Paper Company shall be entitled to receive or retain under said order shall be the sum of \$72,507.12 instead of the sum of \$100,797.71, payable by said manufacturers to said Fort Frances Pulp and Paper Company, Limited, in the amounts and proportions following, that is to say: By the Abitibi Pulp and Paper Company, \$7,915.35; by J. R. Booth, \$4,302.15; by Brompton Pulp and Paper Company, \$5,026.98; by Donnacona Pulp and Paper Company, Limited, \$8,051.24; by Price Brothers and Company, Limited, \$6,844.56; by the Ontario Paper Company, Limited, \$6,554.46; by the Spanish River Pulp Company, Limited, \$25,846.03; by

the St. Maurice Paper Company, Limited, \$8,266.43; total \$72,507.12.

#### Controller in Error.

"We think the learned Paper Controller erred in directing interest to be paid to the Fort Frances Pulp and Paper Company, Limited, on the said amounts, which he found payable to said company as differential.

"We further adjudge and order that any of the said contributing manufacturers who has under and in obedience to the said order of the Paper Controller, paid to the Fort Frances Pulp and Paper Company, Limited, as differential, covering said ten months period, or as interest thereon, any sum in excess of the amount which we have above specified and adjudged as being properly payable by said manufacturers shall be repaid such excess forthwith by the Fort Frances Pulp and Paper Company, Limited.

"The appeal of the Ontario Paper Company, Limited, from the said order of the Paper Controller is dismissed.

"Signed by Justices White, Archer and Middleton."

#### GREAT GATHERING OF PRESS MEN.

"Press Day" at the Canadian National Exhibition, Toronto, was observed on Friday, Aug. 29th, and attracted an attendance of over two hundred newspaper men and publishers, representing every part of the Province of Ontario and including visitors from other provinces as well.

The journalistic guests were accorded every courtesy from the directors and president T. A. Russell spoke most appreciatively of the splendid support and encouragement which the press had always given the Exhibition Association, enabling it to present in many forms the varied industrial, commercial, art and educational wealth and expansion of the Dominion and to make the institution the largest of its kind in the world.

W. J. Taylor of Woodstock, president of the Canadian Press Association, and Sir John Willison, of Toronto, the widely known Canadian journalist, delivered appropriate addresses in which they touched upon problems of reconstruction and the necessity for harmony, unity and co-operation, in order to meet satisfactorily the many after-the-war issues. Both referred to the part the press had played in the success of the last Victory Loan and the publishers were again urged to do their part in seeing that the forthcoming federal loan of \$300,000,000 is raised by the people in order to meet the requirements of the government in adjusting conditions and rehabilitating the thousands of returned men who did so much for King and Country in the great crisis now so happily closed. Sir John Willison declared that there was too much destructive criticism in the papers and not enough constructive at this particular juncture.

#### BIG LUMBER ORDER FOR FRASER CO.

The output of the Fraser Co., Limited, pulp mills at Edmundston has reached 90 tons daily. The capacity for which the plant was constructed was 100 tons, but they now expect to exceed this as the result of improvements which are being made. The Fraser Company are now shipping the 65 million feet of lumber which the British Government recently purchased from them as part of 40-billion feet order which it was announced was being placed in Canada.

#### CANADIAN PULP FOR AUSTRALIA.

Australia's demand for newsprint paper alone should suffice to justify the considerable development of the Pacific pulp and paper industry and help to swell the volume of Canadian exports, says the Royal Securities Corp., in July "Investment Items." In the fiscal year 1916-17 Australia imported \$8,801,173 worth of printing paper, of which Canada supplied only \$1,302,234. It would not be possible for the United States to compete with Canada for the remainder of this business as it was able to in 1917, and if a free market for newsprint should be restored in the United States and prices allowed to find their own level, there would be little or no incentive to the American newsprint manufacturer to do any exporting at all.

In the ease of the great natural industries, the geographical advantages of the Pacific Province are very great. Nowhere else in the world is there a more magnificent display of forest resources, more conveniently situated within reach of tide-water and contiguous great all-the-year-round ocean ports.

The rapid growth of the Canadian pulp and paper export trade on the Pacific is indicated by the fact that Canadian exports of pulp and paper to Australia and Japan during 1917 amounted to \$2,001,540, and in 1919 to \$5,782,220—an increase of no less than 188 per cent. In 1918, Canada's export of pulp and paper products to South America were 5 $\frac{3}{4}$  times what they were in 1915.

#### CELLULOSE COMPANY CLEARED.

The report enquiring into the British Cellulose Company and its relations with various Government departments was issued August 13th. The promoter of the company, Colonel Grant Morden, is well known in connection with Canadian financial enterprises. General Sir Sam Hughes, Eric Long, son of the former Colonial Secretary, E. W. Ashe, London manager of the Union Bank of Canada, were shareholders and the name of Col. Bryan, formerly Canadian Assistant Red Cross Commissioner, is also introduced through his connection with the Prudential Trust.

"If all the facts which we have sifted with so negative a result had been available last year to critics," says the report, "we think their conclusions would, to say the least, have undergone large modification. It is satisfactory to be able to report that in our opinion there has been neither favoritism nor corruption, and that official action taken has been throughout such as appeared to the departments concerned the best open to them under the circumstances."

The value of the company's shares rose from 6d. to 10 guineas and this drew much criticism, as the product, cellulose acetate was used on airplanes.

#### JEFFREY MANUFACTURING COMPANY OPENS DETROIT BRANCH.

Owing to the constantly increasing demand for their products in the Detroit district, the Jeffrey Mfg. Company opened a new branch office in Detroit in the Book Building on Washington Street between State and Grand Avenues.

This office will be in charge of Mr. O. B. Wescott, who has had long and successful engineering experience in the Sales and Engineering-Construction Department of our company and is well equipped to render valuable assistance to clients in working out the most economical and practical material-handling equipments for their requirements.

### SPANISH RIVER HAD BEST YEAR.

Everybody enjoys watching a winning fight. The Spanish River Pulp and Paper Mills have been engaged in a struggle with adverse business and financial conditions and are winning out. The last year has practically marked the end of a long up-hill fight. Once they get on top it is quite certain that the present management will see that this concern stays there.

In spite of the excellent financial position shown by the statement for the year ending June 30, 1919, it is significant that the earnings even of such a favorable year as the past one, do not yet represent an adequate return upon the very valuable resources of the company, or the large amount of capital invested.

The achievements of Spanish River Pulp & Paper Mills, Limited, have been one of the outstanding features of the industrial world of Canada during the past few years, and the strides that have been made would indicate that the company is now bound to play a more important part in the development of the pulp and paper industry of the country.

The strong position in which the company is now placed is reflected by current assets of \$7,331,117, as against liabilities of \$1,537,233, giving the company a working capital of approximately \$5,800,000, as against \$3,094,410 at the end of the previous year.

Of particular interest is the reduction in loans from banks from \$2,000,000 to \$500,000, while accounts and bills payable now stand at \$793,330, down from \$1,429,851.

The net revenue of the company for the year ended June 30, 1919, was the largest on record, amounting to \$2,757,964 compared with \$1,829,231 in 1918, an increase of \$1,028,733, or 59 p.c. These earnings also compare with \$2,117,724 in 1917, and \$1,342,300 in 1916.

After deducting interest charges of \$799,975; allowing for depreciation an amount of \$501,168 compared with \$344,137 in 1918, and \$269,821 in 1917, and deducting for government taxes and contingencies appropriation a total of \$160,000 there was left available for dividends \$1,296,921 or equal to 22.7 p.c. on the outstanding preferred stock of \$5,699,100, compared with 10.1 p.c. on that issue the previous year and 19.1 p.c. in 1917, the best previous year in the history of the company.

Allowing for a distribution at the rate of 7 p.c. on the preferred issue, or \$398,937 there is left for the common stock \$897,984, or equal to 11.1 p.c. on that issue compared with \$179,000, or 2.2 p.c. in 1918.

The total profit and loss surplus of the company at the end of June last made a new high record at \$2,368,222, compared with \$1,071,301 in 1918, and only \$268,330 in 1914. This increase in the profit and loss surplus over the last four years is the more remarkable when it is considered that the company has also wiped out a deficiency account amounting to the very large sum of \$1,335,399.

In the assets column pulpwood supplies are lower than a year ago, but this is only natural considering the large business done by the company. On the other hand actual cash shows an increase from \$276,740 in 1918 to \$516,001 in 1919, while the company is the holder of Victory Bonds to the extent of \$91,250 compared with no holdings of this kind the previous year.

#### Remarks of the President.

George H. Head, the president of the company, in his address to the shareholders, which accompanies the annual statement, says:

"The completion of construction work and proper balancing of the plants as referred to in the report of last year has given the first annual opportunity to the company for demonstrating its earning ability. The result of the past twelve months' operation, while showing substantial increase over the previous year, does not, however, in the opinion of your directors, yet represent an adequate return upon the very valuable resources of the company or the large amount of capital invested.

"The year's available water supply was particularly good and the company consequently had a large production of groundwood. With the exception of sulphite (the market for which has been somewhat limited in recent months) the output of all products of the company has nearly approximated capacity.

"As there were no sinking fund requirements during the past fiscal year, the company, having paid no dividends upon its capital stock, has been able to materially reduce its bank indebtedness and therefore finds itself in a strong cash position.

"Your directors have determined that it is in the best interests of all security holders to pay the deferred interest on bonds and notes due in 1922, and redeem the second mortgage debentures, due in 1924. To provide the necessary funds they have arranged the sale of \$3,500,000 new 6 p.c. Serial Mortgage Lien Ten Year Notes, part of an authorized issue of \$5,000,000.

#### Greater Production Required.

"Because of the increasing demands of regular customers of the company, the installation of two additional paper machines at Espanola with a capacity of 100 tons per day, has become necessary. It is proposed to pay for this installation out of the proceeds of the sale of the \$3,500,000 of Notes and the earnings of the ensuing year.

"Approval by the stock holders of the \$5,000,000 note issue, as well as the sale of the above mentioned portion of the notes, is being asked at a general meeting which has been called for the same date as the annual meeting.

"In anticipation of the payment of deferred interest and second mortgage debentures, a call has been issued by the directors as of August 1st, upon the talons and notes representing the deferred interest, and a call will be made upon September 1st for the second mortgage debentures. In each case six months' notice must be given to holders, therefore payment will be made on February 1st and March 1st 1920, respectively.

"With the foregoing obligations disposed of the company will be free to consider the payment of dividends upon its preferred stock and your directors' propose in the near future to submit for consideration a plan for accumulated dividends thereon."

Mr. Mead then refers to the election of Mr. George R. Gray and Mr. J. G. Gibson to the Board and mentions the death of Mr. B. Tooke and the resignation of Sir William Stavist.

#### REVIEW OF RECENT LITERATURE.

**R-0. Possibilities of manufacture of paper-pulp in Australia.** G. Lightfoot, Commonwealth of Australia, Advisory Council of Sci. and Ind., Bull. No. 11, 1919, through J. Soc. Chem. Ind., 36, p. 356a, (1919). The various studies which have been made in connection with the production of paper pulp in Australia are summarised and discussed in their technical and economic aspects.—A.P.-C.

### THE SINGLE DEFLECTION METHOD OF WEIGHING.

By PAUL H. M. P. BRINTON, University of Arizona.

Memories of many weary hours in the balance room came to mind as the editor read Prof. Brinton's interesting paper in the *Journal of the American Chemical Society* 41, 1151 (Aug. 1919). With so many discussions of analyses before the chemist, manager and purchasing agent these days, a few extracts from this article will surely be helpful:

The method is carried out as follows: The balance is given a permanent overload on the left arm by screwing the adjusting nut on one end of the beam until when the beam and pans are released the pointer will swing out from 3 to 7 scale divisions to the right. The pan arrests must be so adjusted that there is no lateral vibration of the pans when released. Before determining the zero point the stability of the pans is assured by moving the pan-arrest button in and out a few times. The beam is then freed, and the pans are next released by a gentle, steady motion. The pointer will swing out to the right, and the turning point of this single excursion is taken as the zero point. To obtain the weight of any object it is only necessary to add weights until the pointer is caused to swing out to the same point on the ivory scale. The convenience and rapidity of the method were immediately apparent, but grave doubts were entertained as to its practicability and reliability until confidence was established by critical investigation. (This is fully described in the article.)

From this investigation it is seen that in the work of entirely inexperienced students, with ordinary balances, any error introduced through inconstancy of deflection will probably not exceed 0.1 mg.

For those trying the method on a very sensitive balance it is suggested that attention be paid to the effect of the currents of air, or the lengthening of the beam, caused by the heat of the hand near one pan, for it will be found that the first swing does not always accord with those which follow. This method is so rapid that irregularities are easily detected which would frequently escape observation by ordinary manipulation.

With a sensitive balance a few moments must be allowed for abatement of jar and air currents, but equilibrium is soon re-established. This is not to be construed as a criticism peculiar to this particular method, for it will be understood that the same precaution is necessary with any system of weighing.

#### Behavior With Various Loads.

Two faults frequently found in balances, especially in those of cheaper grade, are varying sensibility under increasing load, and inequality in the lengths of the two lever arms. It is evident that both these conditions would influence the accuracy of absolute weighings by the single deflection method, but in nearly every instance in analytical work the weighing consists in comparing the weight of an empty vessel (watch glass, crucible, or dish) with that of the same vessel containing at most a few grams of sample or ignited precipitate. Manifestly, then, the error introduced by varying sensibilities, or by inequality of arms, would be negligible in nearly all cases of analytical practice. The

method has been successfully used by students in calibrating weights by the method of Richards<sup>1</sup> and a few hours only are required by even a beginner for the calibration of a full set of weights.

#### Precautions and Limitations.

The single deflection method of weighing cannot be used with those types of balances in which the beam and pan-arrests are all released by one operation, as by the turning of one milled head or lever; and it has occasionally been found that a balance of the correct general type has failed to give concordant readings in successive weighings. In nearly every instance it has been found that these balances failed to yield concordant weighings by any other method.

The pan-arrests must be clean and adjusted to the proper height. A little alcohol will remove any grease which might tend to cause sticking of the pan-arrest to the bottom of the pan.

A little experience with a particular balance will soon show one just how far the method can be trusted with that instrument. With the balance habitually used by the writer, which has an unvarying sensibility with loads up to 50 g., the method is regarded as suitable to work of the very highest accuracy. It is realized that the error of a single observation should be greater than that of the mean of 3 or 5 observations, but it may be pointed out that it is much easier to read with the highest accuracy when the swing is to one side only, and does not cross a centre point. Furthermore the chance for lapse of mental concentration and attention is greatly diminished in the single deflection method. In work of great importance the weighing can be checked by a second weighing in less time than is needed for one weighing by the conventional methods.

### VAST FOREST FIRES IN FRANCE.

Toulon, August 31.—Vast forest fires are ravaging the region between Toulon and Cannes. The fire reached the seashore resorts around Calaire Bay and the people in the hotels and restaurants were compelled to evacuate and take refuge on the beach.

Strong westerly and northwesterly winds are aiding in the spread of the fires both in the centre of the Maures range and on the southern slope. According to the latest advices the flames are assuming alarming proportions and threatening the towns of Gras and Antibes. Despatches from Sardinaux say that between eight and ten villages, notably Grimaud and Cogolin, are surrounded by fires. Aid is being rushed to the threatened points from various nearby towns.

### AUSTRALIA EXPORTS PAPER.

The eight months of the financial year to February show a large expansion of business in paper and chemicals, as in other departments of trade. Paper imports represent a striking rise, while paper exports figure conspicuously in the published list.

For the eight months 1917-18, paper imported into Australia represented a value of £2,305,596. In the corresponding period for 1918-19, the figure has rushed up to £3,069,429 again, a difference of very nearly a round million.

Exports of paper for the eight months of 1917-18 were valued at £88,363, and this figure has now risen in the later period to £165,914.

It is better to take pains in preventing accidents than to suffer pains as a result of them.

**FINE FALL MEETING FOR T. A. P. P. I.**

The fall meeting of the Technical Association of the Pulp and Paper Industry to be held at Chicago in conjunction with the Fifth National Exposition of Chemical Industries, September 24, 25, 26 and 27, 1919, gives promise of being well attended and productive of several important contributions to our knowledge of papermaking processes and engineering developments.

In addition to the papers reported for presentation there is promised an account of research work done at Columbia University on the utilization of waste sulphite liquor as fuel by Prof. Ralph H. McKee and George Barsky; a demonstration and talk on an apparatus for testing paper for tearing strength, tensile strength, stiffness, resilience and folding strength; and a special address on engineering problems in the papermill.

An interesting discussion of losses of soda in the evaporation of black liquor in sulphate pulp manufacture will be directed by the Committee on Sulphate Pulp, O. Bache-Wiig, chairman.

The Committee on Sulphite Pulp, H. G. Spear, chairman, have been working on new and improved methods of handling waste liquor from the digesters and of cooling the SO<sub>2</sub> gas from the burners. Other studies and investigations will be embodied in their report which should be of considerable value to sulphite-pulp manufacturers, especially in view of the discussion that will be elicited.

The report of the Committee on Soda Pulp, Martin L. Griffin, is in the hands of the secretary and will be sent out to members in advance of the meeting. The report deals with the principles and practice involved in washing unbleached soda pulp. The formal discussion of the subject will be led by the members of the committee associated with Mr. Griffin, George K. Spence, William H. Howell, jr., and George M. Trostel; O. Bache-Wiig, P. Dolin and others.

A continuous sedimentation or freeness tester for groundwood pulp has been developed at the mill of the Watab Pulp and Paper Company, Sartell, Minn., under O. L. E. Weber, and this will be described by Fred A. Naegeli, chemist of the company.

On the second day of meeting the members will be the guests at luncheon of the Chicago firm of Sears, Roebuck & Co., after which a personally conducted tour of the papermaking department of the extensive plant of this company will be taken.

The entire day of Friday, September 26, will be spent at Madison, Wis., inspecting the pulp and paper branches of the Forest Products Laboratory, under the guidance of Carlile P. Winslow, director and staff, which includes a number of T. A. P. P. I.

Trains for Madison, Wis. leave Chicago over the Chicago and Northwestern Railroad on Thursday evening, September 25, at 5.30 and 8.00 o'clock. A special sleeper leaving Chicago at 2.00 A.M., Friday, September 26, will be ready for occupancy at 10.00 P.M. Thursday. This train is due to arrive in Madison at 7.20 A.M. Friday. Breakfast will be served at the Park Hotel. The first class fare from Chicago to Madison is \$4.21 and sleeper berth \$1.62. It is important that early notice be given the Chicago convention committee of the intention of members to attend the meeting and join the party on the trip to Madison, Wis., and this can be done by a postal card addressed to Thomas H. Savery, jr., chairman of the committee, 1718 Republic Building, Chicago.

**BOARD OF TRADE VISITS B. C. PULP MILLS.**

Ocean Falls, the thriving little paper-making town of the Pacific Mills Co., Limited, extended the glad hand in right royal fashion when the Vancouver Board of Trade excursionists reached their trip up the coast. The 325-mile journey from Vancouver was made in the finest of weathers, through the beautiful surroundings of the inside passage, the arrival at Ocean Falls being made sharp on schedule time at 4 o'clock. In the three hours stay the members of the party, with the Paymaster and Superintendent of Pacific Mills, Limited, as hosts, enjoyed the freedom of the town, visiting every part of the huge paper-making plant, the power house, hospital, and other modern institutions, and also finding time to roam at will through the well-kept residential portion of the town.

Ocean Falls cannot be seen from the steamer until a few minutes before reaching the dock, when a thriving little industrial centre suddenly looms before the eyes, like a picture in a page just turned. About 1200 men are employed there in the various processes of paper-making, and this does not include crews for logging operations.

The company is doing very little logging this season, nearly all its raw material being obtained from the spruce camps formerly operated by the Imperial Munitions Board. These logs are towed across the turbulent waters of Hecate Straits in big cigar-shaped rafts.

A thorough insight into the manufacture of newsprint, kraft and other kinds of paper, was given the visitors, the trip through the mill revealing the different stages of manufacture, from the big rough logs to the finished article lying in the huge storehouse.

The Ocean Falls plant is turning out paper at the rate of 250 tons daily, the greater part of this output being exported. The total population of the town is about 2,500, and everybody seems to be contented. This is not to be wondered at because nearly all the men are making good wages, a large number of them averaging as high as \$300, a month.

Labor agitators are not wanted as two of them recently found out when they were quietly informed that their presence was not nearly so valuable an asset to town as their rooms. The two left when they received no sign of support from the men. The boat left Ocean Falls at 7 o'clock and the only other stop made was at Swanson Bay, the Whalen Company's big lumber and pulp plant. Although it was in the small hours of the morning, several of the visitors went ashore for the short stay of the boat.

**W. G. McADOO FAVORS METRIC SYSTEM.**

San Francisco, August 30.—World Trade Club of San Francisco continues to receive authoritative support in its campaign for world-wide use of metric units.

A strong statement from William G. McAdoo, wartime Secretary of the Treasury and Director of Railroads, has just been transmitted.

At the recent banquet given in New York City by the Pan-American Society of the United States to President Pessoa of Brazil, he declared: "A very important thing is the adoption of the metric system. It was the most unhappy event that the metric system was ever defeated when it came up here — a monumental mistake. If taken up seriously and applied intelligently we could get it transformed in a few years, and it would do more for the development of trade than anything ever yet attempted."

### LAURENTIDE STILL PROSPERS.

During the year ended June 30 last, Laurentide net earnings were equal to 19 per cent on the company's outstanding capital issue of \$9,600,000, the showing amply warranting the action of the directors in granting to the shareholders a further participation in the prevailing prosperity. The position of the company in the way of working capital, as shown in the statement published elsewhere on this page, is so strong that President Chahoon stated at yesterday's meeting that:

"The bond issue of \$1,200,000 will be due on January 2nd of next year. \$634,778.73 of this amount has been purchased by the company and lodged with the Royal Trust Company, the remainder will be paid off and the entire issue cancelled when due."

When this is effected Laurentide will be without bond obligations of any kind so that with a continuance of prevailing conditions in the industry the outlook of shareholders in the enterprise should be materially enhanced. President Chahoon, questioned by one of the shareholders regarding the company's policy respecting reforestation and fire protection, stated that approximately 1,000,000 young trees had been planted during the year, and that it was hoped that the nursery by the spring of next year would be capable of producing sufficient to bring the annual plant up to 2,000,000 trees. The loss through fire during the past year had been practically nil, said Mr. Chahoon, paying tribute to the very wise and far-seeing policy of the province of Quebec regarding forest protection.

The outlook for the current year, he stated, was exceedingly bright. The consumption of newsprint paper, based largely as it is on the demand for advertising space, exceeded anything in the world's history.

Officers and directors were re-elected as follows: George Chahoon, jr., president; Chas. R. Hosmer, vice-president; R. B. Angus, Edwin Hanson, F. A. Sabatton, J. K. L. Ross and Sir Thomas Skinner, Bart., Louis Armstrong was named treasurer; W. F. Robinson, secretary, and F. E. McNally, assistant secretary.

### BRITISH COLUMBIA ITEMS.

There is a marked activity in the pulp industry in British Columbia. Buyers are looking this way for supplies, and at good firm prices. The older mills are booked ahead with orders, and the new mills are getting orders at prices which they had not expected two months ago.

The Beaver Cove plant will have their first lot of pulp out by the last of September.

The new issues of the Whalen Company stock will place this Company on a working basis that means rapid strides in their plans for export business.

Taken all in all the British Columbia pulp market is rapidly becoming a factor in the trade to be reckoned with.

Certain buyers have come to British Columbia, looked over the market, gone East, without buying, and finally came back here and bought or wired back their orders.

It is only a question of time when new capital will be invested in new plants in British Columbia, and that at no late date, and this will mean that then pulp and paper industry will grow to proportions that were dreamed of 10 years ago. It will also mean that ultimately the pulp instead of all being shipped away will be manufactured into paper right here.

### SURPRISED BY CALLING OF HEARING SEPT. 8.

A big surprise in newsprint manufacturing circles was sprung at Ottawa on Tuesday when communications from the Paper Controller, to the newsprint manufacturers was received, notifying them that the Canadian Newsprint Inquiry would resume at the Court House, Ottawa, on Monday, September 8th.

The calling of the inquiry is primarily for considering the recent judgment handed down by the judges of the Paper Control Tribunal, setting the price of Canadian newsprint from July 1st to November 30th, 1918, from \$69 per ton as ordered by the controller to \$66, and other matters.

Though it was not up to Tuesday night mentioned definitely there is also a possibility of the differentials being taken up. The requests to attend the hearing were extended to publishers as well as newsprint manufacturers. The surprise in the sending out of the communications was that they followed so quickly on top of the judgment of the Paper Control Tribunal. One view that could easily be taken of the situation is that matters all along the line are going to be materially speeded up, the inquiry brought to an end, and prices fixed for the different periods covered by the Controller's orders. Whether this is going to quickly materialize or not has yet to be seen. Mr. Pringle in his comment on the decision of the judges drew attention that the honorable members of the Tribunal in setting their price at \$66 had not taken into consideration the 11 months when newsprint had sold for \$50 per ton and the five months that followed when Government orders placed its figure at \$52.

### TRIBUTE TO RESOURCES OF QUEBEC.

The possibilities of Canadian natural resources in reconstructing devastated Europe are outlined by Lt.-Col. P. Pelletier, agent for the Province of Quebec, in London, in an article in a London daily paper, while referring to the Dominion as a whole, Lieut. Col. Pelletier naturally puts in a strong plea for the Province of Quebec, particularly in regard to lumber, pulp, and minerals.

"We are," he says, "in a position to supply timber for houses, railways, mines and other purposes of national importance. Wood pulp is here manufactured on a huge scale, enabling us to supply the needs of paper manufacturers in Great Britain and elsewhere. Our water-power equals one-half of the total estimated water-power of the whole Dominion, and only a small proportion has been developed for industrial purposes. Here are opportunities, indeed, for the enterprising British capitalist to build up wood pulp, paper, and other industries based upon the utilization of forest products."

### OUTING AT GRAND'MERE.

The Montreal officials and staff of the Canadian Export Paper Company, to the number of fifty, spent Labor Day at Grand'Mere, the guests of the Laurentide Company, Limited. The nurseries of the Forestry Department, also the golf links were visited in the morning, and a typical lumberjack's "spread" was served at the log sorting camp three miles up the river. Considerable time was devoted to going through the immense pulp and paper mills, and the day closed with a dance at the clubhouse.





## Technical Section



### REVIEW OF RECENT LITERATURE.

**K-14. Process and machinery for glazing both sides of paper.** (Procédé et machine pour le satinage double face du papier rugueux en feuilles.) Fr. patent No. 479,536. Escher, Wyss & Cie., Zurich. *La Papeterie*, 41, p. 62, (June 10, 1919). Both sides of the paper (in sheets) are glazed on the one machine by using two pairs of rolls and two felts, each pair glazing one side of the paper.—A.P.C.

**K-14. Paper cutter.** (Machine to couper le papier autres matières analogues.) Fr. patent No. 478,989. F. W. Vickery, England. By means of a series of gears and clutches the paper is cut transversely twice during each revolution of the driving wheel, each time the crank passes dead-center.—A.P.C.

**K-23. Process and machinery for making reinforced paper.** (Procédé et appareil pour la fabrication d'un papier armé très résistant.) Fr. patent No. 474,864. Maunoury & Cie. *La Papeterie*, 41, p. 60, (June 10, 1919). By means of a very ingenious device threads are imprisoned between two sheets of paper firmly glued together. The threads lie both longitudinally and diagonally in the paper. The process is continuous.—A.P.C.

**L-5. Solution of cellulose in zinc chloride.** (Obtention d'une solution de cellulose par le chlorure de zinc.) Fr. patent No. 489,330. Ogawa, Okudo & Murata. *L'Industrie Chimique* through *La Papeterie*, 41, p. 80, (June 10, 1919). In the process covered by this patent solution is effected at 100° C with violent agitation. Solution may be completed in half-an-hour.—A.P.C.

**L-7. Paper textiles in Germany.** (Articles allemands en papier tissé.) *La Papeterie*, 41, p. 39, (May 25, 1919). The thread for most articles was made from paper ribbons spun while moist. Their appearance and strength are comparable to those of thread made by the Kron process (described at length in *La Papeterie* in 1909 and 1910). In certain cases the thread was prepared from cellulose solutions by a process similar to that for making artificial silk. Though some manufacturers say they are satisfied with paper belting, most of them are anxiously awaiting the arrival of leather belts. Several mills are being equipped for the manufacture of certain paper textiles in France.—A.P.C.

**L-7. Paper thread.** (Fil en papier.) *La Papeterie*, 41, p. 80, (June 10, 1919). "Zellulon" is obtained obtained by an improvement of the Turk wet-spinning process, which first appeared in 1891. The stock is prepared in the same manner as for making paper; but instead of being sent to the paper machine it is sent to special circular wires from which it comes in the form of narrow ribbons which are immediately spun and yielded a thread containing 55-60% moisture, which is slowly dried. It is much stronger than ordinary paper. The loss on spinning is only about 5%, while spinning paper by the older processes gave 30-50% waste.—A.P.C.

**N-4. Electricity as a source of heat in boilers.** (Production de la vapeur dans les chaudières par l'électricité.) *Schweizerische Bauzeitung*, Apr. 1917, p. 183, through *La Papeterie*, 41, p. 126, (June 25, 1919).

Tests conducted in Switzerland in 1916 have proved that electricity can advantageously be used for generating steam where power is very cheap. The efficiency is about 90%.—A.P.C.

**R-0. The coal crisis and German Industries.** (L'influence de la crise du charbon sur les industries allemandes.) *Bull. de la Chambre de Com. Fran. de Turin*, through *La Papeterie*, 41, p. 138, (June 25, 1919.) The situation of the German industries owing to lack of coal has become appalling. The pulp and paper industries on which great hopes had been founded for raising and steadying the rate of exchange by means of enormous exportations, are no better off than the others. Many mills are shut down, and the others, while still producing a limited output, expect to have to shut down in the more or less remote future.—A. P.C.

**R-0. Proposed French National Bureau of Paper Standards.** (Quelques idées.) *Papyrophile. La Papeterie*, 41, p. 50, (June 10, 1919). The conditions arising from the war are such that it is imperative for the French Paper mills to exercise a very strict technical control of all departments if they are to compete successfully with foreign paper manufacturers, both as regards cost of production and quality of paper. There should be close co-operation between the maker and the user in order that orders may be filled in the most satisfactory manner. A National Bureau, similar to the one in New York, should be created, which could act in many ways as go-between for the manufacturer and the consumer. It would also be advisable to form a technical committee whose duties would be to look into and improve the methods and processes of any mill desiring it.—A.P.C.

**R-5. European markets for Canadian pulp.** *La Papeterie*, 42, p. 179, (July 10, 1919). "Farmand," a Norwegian paper strongly voices its indignation at the fact that Mr. Becker (of Becker & Co.) openly expressed the opinion that there is a good market for Canadian pulp in England, for the English paper industry has no great love for the Scandinavians who took all they could during the war. *La Papeterie* says Mr. Becker has a right to his opinion, and sees no objection whatsoever to his expressing it publicly; but it does not agree with Mr. Becker's views, Canada is a very large producer of high grade pulp; but there are several very serious obstacles which will prevent it from being a serious competitor to Scandinavia on the European, and more especially the French markets for a long time to come. (1)—The transportation rates from America to France are several times those from Scandinavia to France. (2)—The Canadian manufacturer is content with selling f.o.b. Canadian port, and does not want to be bothered with what happens to the pulp after it leaves Canada. Moreover he wishes to deal in large quantities of pulp. The French manufacturer does not even want to buy c.i.f. French port, but wishes to have the goods delivered practically at his mill. Moreover he likes to buy in small quantities, as small as 10, 20, or 30 tons. A 200-ton order is considered quite large. (3)—The system of weights being different in the two countries, this would entail more trouble and time than would appear at first thought.—A.P.C.

# UNITED STATES NOTES

Negotiations pending toward the merger of the St. Regis Paper Company and the Remington Paper and Power Company will bring about the consolidation of the two largest newsprint manufacturing concerns in the northern section of the New York State. The consummation of this deal will mean a concern with more than \$25,000,000 in assets and will bring about the formation of what will be the third largest newsprint company in the United States. Seven mills with an output of 450 tons of paper daily and a water power of between 40,000 and 50,000 horse-power are involved in the deal.

The investigation of the print paper situation planned by the Senate will be conducted by a sub-committee of the Senate Manufactures Committee, it was decided last week. Senator La Follette of Wisconsin, who was selected as chairman of the probe committee, announced that the information secured by the Federal Trade Commission would first be examined and that subsequent to the completion of this preliminary phase of the inquiry, hearings would be held.

Net profits of the United Paperboard Company for the year ended on May 31 were \$188,111, according to a report made public by the company last week. Dividends of \$186,426, of which a part represented a 6 per cent disbursement on the preferred stock and 1 per cent, on the common, were paid, leaving \$1,684 surplus for the year. Sidney Mitchell, president of the corporation, in his remarks to the stockholders, says that the mills at Fairfield, Me.; Yorktown, Ind., and Urbana, Ohio, which were shut down in the previous year, have not been in operation because of prevailing low prices. He points out that those mills could not be operated except with substantial loss. During the year the company spent \$419,807 for mill improvements. It holds \$400,000 worth of Liberty Bonds.

The Union Bag and Paper Company has declared a quarterly dividend of one and one-half per cent, payable to holders of its stock on September 15.

Though recent activity in International Paper in the New York stock market has given rise to talk that the company is likely to resume dividends before the year is out, the matter, it was learned, has not been considered by the big paper concern's directors, and the probability is that there will be none this year, since the International has its fall financing ahead of it. While International is enjoying a prosperous year, present indications tending to show that the last Government restrictions will probably be lifted soon, the fact of the company's very rapid recent growth has made the extension of its cash account necessary. The same interests responsible for shooting International Paper through 70 are reported to be in the market again and they are using for a market level the report of a probable dividend.

A conference of the Empire State Forest Products Association, the State Conservation Commission and the New York Forestry Association with Col. H. S. Graves, Chief of the United States Forest Service, is to define a national and State forest policy. It has been called in New York State for the second week

in November at Syracuse. Preliminary plans made by a committee in session last week in that city propose to call all persons of the State interested in forests to attend and hear Col. Graves discuss his proposed national forest programme. The New York conference hopes to get an agreement for a future policy which will satisfy the forest service and the lumbermen.

About 2000 workers in the paper box industry in Brooklyn walked out last week when a strike was ordered by Jacob Weinberg, general organizer of the paper box unions. Among the demands made are a 40 per cent. salary increase and improvements in sanitary conditions in the workshops.

Articles of incorporation have been filed at Portland, Ore., by the Western Waxed Paper Company. The capitalization of the concern is placed at \$250,000 and its incorporators are Andrew Christ, Jr., A. F. Adams and W. C. McCulloch. The main company office will be located at Portland. The purpose of the corporation is to establish and conduct plants for the manufacture and sale of waxed papers.

## QUARTER CENT MEANS \$1,500,000.

Newsprint is to-day selling at \$3.75¼ a hundred pounds, carload lots, f.o.b., mill. This price has been in effect since July 1918. From May 1st to July 1st, 1918, a price of \$3.63¾ a hundred was in effect by order of the Federal Trade Commission. The publishers contend that these prices were not justified, and, therefore, any decision of the Circuit Court judges will affect the sales more than future business. On the other hand, the newsprint manufacturers contend that a higher price is justified, due principally to a steady increasing wage scale.

Assuming that 300,000 tons of newsprint have been sold from July 1st, 1918, to the time the judges make a decision a variation of one-quarter-cent a pound in the price fixed either upward or downward would mean a difference of \$1,500,000 to the company.

## MORE BOATS ON PULPWOOD ROUTE.

The Meigs Pulpwood Co., Inc., whose head office in New Brunswick is at Campbellton, with branches at Casepédia, New Richmond and other points, are conducting extensive pulpwood operations and during this season will carry on more extensively than ever.

The Meigs Company operate about 12 terminals and pulpwood propositions in Canada and one of the terminals is across the lake at Oswego, N. Y. Four additional steamers will be put on the route carrying pulpwood from Quebec and New Brunswick to Oswego and other points. These are now being loaded at Gaspé. Every steamer's cargo ranges from 1,000 to 1,500 cords of pulpwood. The terminal at Oswego has a capacity of 60,000 cords.

Mr. Walter Meigs, president of the Meigs Pulpwood Co., Inc., recently paid a visit to Oswego and stated that not only would the storage facilities there be extended but certain changes would be made in the conveyors and unloading devices at the plant so that steamers would be relieved of their cargo in much quicker time than in the past.

# PULP AND PAPER NEWS



R. E. Whiteman representing the George Irish Paper Co. of Buffalo, N. Y., was in Toronto this week calling upon the trade and taking in the sights of the Canadian National Exhibition.

Archie Reid, business manager of the National Paper Co., Valleyfield, Que., and formerly accountant of the Provincial Paper Mills Co., Toronto, spent a few days in Toronto this week calling upon old friends in the trade.

J. Hewitt, President of Paper Sales, Limited, Toronto, has returned from a successful and enjoyable fishing trip of a couple of weeks spent at Burleigh Falls, Ont.

J. J. Ting, who is a special representative of the Ministry of Agriculture and Commerce of the Chinese Republic, was in Toronto and Montreal during the past few days calling upon the paper trade. He was particularly anxious to make contracts for the early delivery of newsprint which, he states, is scarce in his country.

Wesley Tilton, superintendent of the plant of the Toronto Paper Manufacturing Co. at Cornwall, Ont., was in Toronto for several days this week and paid a visit to the Exhibition.

J. A. Macdonald, former editor of the Globe, Toronto, who has been spending some time at Battle Creek, Mich., for the benefit of his health, has returned to Toronto and, with his wife and family, is once more occupying his own home after several years absence, a considerable period of it was spent in Japan and the Orient.

The annual meeting of the Canadian Paper Trade Association will be held at the Ritz-Carlton Hotel, Montreal, on Tuesday and Wednesday September 16 and 17. It is expected there will be a large and representative attendance from all the leading cities and an interesting programme is being arranged. W. C. Ridgway, of New York, who is secretary of the National Paper Trade Association, has been invited to deliver an address. It will be remembered that, at the organization meeting of the association held in Toronto over a year ago, Mr. Ridgway was to have been present but at the last minute was prevented from being in attendance. He promised to speak at a later date and this time, it is expected, that he will be on hand.

Good progress is being made on the extensions to the plant of the coated paper mill of the Provincial Paper Mills Co., at Georgetown. W. J. Tremble, who has the contract, reports that the first story is completed on all three additions, which are being built of reinforced concrete and steel. The addition to the finishing room is 96" x 80" and to the color room, 38" x 80" and 40" x 60". Construction will be finished in another month and the capacity of the plant will be greatly increased.

The Fraser Companies, who operate a large sulphite pulp mill at Edmundston, N.B., and also several saw mills in the province, intend going on with the erection

of the Fraser Memorial Hospital building, which will be built in Fredericton in connection with the Victoria Public Hospital. His work will be carried out as intended by the late Donald Fraser and tenders have been called for construction.

Work on the new sulphite mill, the groundwood pulp plant and three work shops at Three Rivers, which are being erected by the International Paper Co is now well under way. Construction will be done by day labor. A. H. White, of New York, is the chief engineer and the local engineer is T. R. Ransen.

The annual meeting of the Spanish River Pulp and Paper Mills will be held at the head office in Toronto on Thursday September 18 when the annual statement, which has already been published, will be presented and at the same time a meeting will be held for the purpose of considering and, if approved, confirming a by-law authorizing the issue, sale and pledge of six per cent serial mortgage lien notes aggregating \$3,500,000.

"The Fourth Degree" is the name of a new monthly publication which has been launched in Toronto and will circulate largely among the Masonic fraternity. The paper is issued by the Fourth Degree Publishing Co. and the editor and business manager is K. C. Utley.

"The Echo" which is the organ of the Independent Order of the Daughters of the Empire, Toronto, and has been issued quarterly, will, it is understood, be published in the near future as a monthly journal.

G. N. Simpson, of Toronto, who, is well known in advertising circles, has been appointed business manager of the Phonograph Journal and the Music Trades Journal and has entered upon his new duties.

The Wendigo Power Co. with headquarters at Guelph, Ont., and a capital stock of \$1,000,000 has been incorporated. The plant of the company will be located some twenty miles south of Larder Lake, and will develop hydro-electric power on Wendigo lake and certain parts of the Blanche river. This will be good news to many industries in Northern Ontario.

The Canadian Western Cordage Co., which is a returned soldiers' cooperative industry, will be given a grant of land in Sapperton, B.C. The B.C. Government has advanced the company, under the Industrial Development Act a loan of \$200,000 and the veterans have increased their working capital to \$100,000, having subscribed \$60,000 in cash and they are now taking up the \$40,000 deferred to make the necessary \$100,000.

Joseph E. Ford, eldest son of Joseph Ford, Jr., of Portneuf is a Benedict, having been married last week to Miss. Mary Christine Mackinnon, at the home of her parents. Mr. and Mrs. Alexander Mackinnon, Kimbury, Que. Mr. and Mrs. Ford visits Montreal and took the boat trip to Toronto and Niagara Falls.

## CAMDEN MILL WILL MAKE KRAFT.

The plant of the Camden Paper Co. at Camden East, Ont., is once again in operation under the charge of

E. S. Crawford, who is manager of the plant. The company is at present turning out some building paper, but will be manufacturing kraft in the near future.

### PULP MEN INVITED TO NEW YORK STATE TRUST CONFERENCE

Syracuse, N. Y., Aug. 23.—Col. Henry S. Graves, Chief of the United States Forest Service, will come to New York state to discuss with all interested organizations his proposed national forest policy. This conference may develop into the most important gathering ever held, involving the future of the nation's forests and timber supply.

Announcement of this conference was made to-day by a special committee of the New York State Forestry Association, when preliminary steps were taken to prepare for Col. Graves' visit, which will be to Syracuse, the second week in November. The conference will be attended by representatives of the Empire State Forests Products Association, the State Conservation Commission and the New York State Forestry Association, and invitations to attend will also be sent to representatives of the American Pulp and Paper Association, the Association for the Protection of the Adirondacks, the state retail lumber dealers and all other organizations interested in the forests of the state.

The conference is the result of the realization that the private forests of America are nearly exhausted and that now is the time when the nation and the state must establish principles of production of a timber crop on private land. The growing realization of this need was brought to a focus by the war census of the timber of the nation, to learn exactly where America stood on timber for war purposes. This showed that radical steps must be taken at once to prepare for the future and Col. Graves at once began the formulation of a national policy. Col. Graves is now ready to come to this state and discuss the economic phases of the problem with all the elements in the state interested in Forestry.

The date for the conference has not been definitely set, but will probably be either Nov. 11 or 13, so that some of the organizations interested can hold their conventions in connection with the Graves' conference. The program will be without many set addresses, leaving the time practically free for Col. Graves' address and discussions. Other addresses will be merely to bring out special points for discussion.

### AROOSTOOK SULPHATE MILL SOLD.

A. R. Gould, of Presque Isle, Me., well-known in Montreal through his connection with the St. John Valley Railway enterprise, is the president of a new company which has taken over the Aroostook Pulp and Paper Company's plant on the St. John River, at Keegan, north of Vanburen, Me.

Owing to difficulties the mill has been closed for some weeks and now it is learned, Mr. Gould and H. B. Stebbings, of Boston, have purchased the stock interest of E. P. Lindsay and others in the enterprise and the plant will soon be in full operation once more and eventually on a larger scale than ever.

The plant was built in 1917 and is thoroughly equipped, having a daily capacity of about 60 tons of sulphate pulp, upwards of 200 men have been employed.

### NEW PAPER COMPANY GETS CHARTER.

A provincial charter has been granted the Brockville Paper Mfg. Co., Limited, with headquarters at Brockville and a capital stock of \$250,000. The company, which will erect a three story building in Brockville, will employ 150 hands and turn out book, bond and writing paper. Among the incorporators of the company are Chas. F. Buss, of Mill Roches, and John R. Buchanan, of Ottawa. Brockville will grant the company a free site upon which to erect a plant with a fixed assessment of \$10,000 for a period of ten years. The free use of an excavation to be constructed by the corporation and free supervision by the company of a pumping plant to be erected at the power house of the corporation and to be operated during the term of agreement without charge to the company are also to be extended.

### CLAIMS NEW SYSTEM OF ELECTRIC DRIVE.

Mr. A. C. Barfield, of the Harland Engineering Company, has just returned from Great Britain where arrangements were made for introducing in the Canadian market an absolutely unique method of driving paper machines electrically in such a manner as to secure absolute interlocking Synchronism between each section of the paper machine. This equipment has been in use in Great Britain for over four years working absolutely satisfactorily and practically without any maintenance costs.

This equipment which is called, "THE HARLAND PATENT INTERLOCK" is patented by the Harland Engineering Company. Mr. E. B. Archibald has been appointed to handle this section of the business and will be glad to hear from all interested parties at the company's address: No. 102 St. Antoine street, Montreal.

### WOOD PULP REVIEW FOR JULY, 1919.

According to the report of the Federal Trade Commission, total stocks of all grades of pulp in the mills on July 31st amounted to 242,272 tons, as compared with 263,980 tons on June 30th. Stocks of other than wood pulp and Mitscherlich sulphite increased slightly during the month. There was an increase during the month in the stocks of all other grades.

Comparing the stocks on hand at the domestic pulp mills at the end of the month with their average daily production based on the 9 months' period ended April 30, 1919, the figures show that:

Ground wood mill stocks equal slightly more than 42 days' average output. News grade sulphite mill stocks equal slightly more than 10 days' average output. Bleached sulphite mill stocks equal slightly more than 10 days' average output. Easy bleaching sulphite mill stocks equal slightly less than 8 days' average output. Mitscherlich sulphite mill stocks equal slightly less than 5 days' average output. Sulphate mill stocks equal slightly less than 15 days' average output. Soda pulp mills stocks equal slightly less than 7 days' average output. Mill stocks of "other than wood pulp" equal slightly more than 11 days' average output. Total mill stocks of all grades equal slightly more than 23 days' average output.

The number of grinders and digesters showing lost time during the month of July in operating mills was 1,483 as compared with 1,267 for June. These figures do not include the machines in eight mills that were not in operation during July chiefly on account of lack of orders, repairs and lack of power.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, September 2.—Like the poor, the newsprint question apparently is always going to be with us. The question of the price and the production of newsprint may temporarily pass out of sight and seemingly be obliterated but it bobs up again and, owing to the protracted action of governments, investigating commissions and courts has more lives than the proverbial cat. Just a few days ago it was announced from Washington that another investigation was to be opened by Congress and that the inquiry will now be conducted by the Senate to learn if the industry is engaged in discriminatory practices and whether the prices charged are excessive. Then next we have the decision of the newsprint tribunal at Ottawa, handed out after many weary months, to the effect that the manufacturers got too much money for their product between July 1st and December 1st 1918 and the price for this period was reduced from \$69 to \$66. Naturally this has elated the publishers, who think that things are now coming their way and the news was rather disappointing to the newsprint manufacturers. They will, however, make the refund as directed and the prevailing figure of \$69 will hold from December 1st 1918 up to the present unless varied by subsequent rulings by the tribunal or the controller. Since December last, costs have been steadily climbing and the mills will be able to show that never have manufacturing expenses been as high as now. Both mechanical and chemical pulp have gone up in price, the figure for pulpwood is higher, wages are much above what they were a few months ago and the outlay for other materials has mounted by leaps and bounds. There is no necessity of going exhaustively into matters which are familiar to all connected with the trade but the hard cold fact has to be faced that newsprint is growing scarcer all the while and the demand is increasing proportionately. In spite of the official decisions given out, the law of supply and demand will and must prevail.

The war is now over and there appears to be in the mind of the manufacturers no reason why control should any longer exist. The New Court of

Commerce can get busy if it is thought there are any undue profits made. The press representatives on Press Day at the Canadian National Exhibition, in Toronto took great pride in proclaiming newspapers had not been accused profiteering during the war and, on the other hand, it cannot be charged that the newsprint manufacturers have been grafters or extortioners. Considering the heavy outlays in investments, the abnormal demand for their product and the many lean years through which all the companies came, their earnings have not been out of the way. That the mills can sell their product abroad at much higher rates than they can at home is evidence that prices been too low domestically if supply and demand were allowed to rule the situation.

There has been no midsummer quietness in the paper trade this year and as the fall months are right at hand, mills are looking for more business than ever. Each week sees an increase in the number of orders and the majority of plants are getting farther and farther behind. One manufacturer expressed his view of conditions this week by remarking that business was too good to be comfortable. All departments of the trade are active and printers are having all the orders that they can attend to. Business in the books, writing and ledger lines of paper keeps up well and there has just gone into effect an increase of one and a half to two cents on all rag bond papers. Quotations in other lines are stiff and the volume keeps up admirably.

Coated paper plants are rushed with orders and wrapping paper activity is very marked, particularly in kraft and fibres, which are having a big call. There has, owing to advances in raw materials, been an increase of a quarter of a cent on all tag and bristol papers as well as envelope manila. There has as yet been no change in poster or cover papers but it would not be surprising to see present figures augmented in the near future.

The demand for groundwood pulp is increasing all the while and prices are very firm while sulphite pulp is getting stronger and contracts with mills are only on a month to month basis. This is a very different

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state of affairs from what prevailed two or three years ago when contracts were gladly entered into by the producers for as long terms as six months and even a year. Then the future could be reckoned with but, with constant requests for raises in wages, increasing shipping and cartage rates, the growing cost of wood and other considerations, mills are not able to see more than a few weeks ahead. The export situation is improving considerably although carriage rates are still sky high. One leading Canadian concern recently shipped pulp to several countries. Each week sees representatives from all over the world coming to Canada to look for paper supplies and during the past week a government official from China arrived in search of newsprint.

The rag and paper stock market is exceptionally brisk and supplies limited. There are steady advances in quotations and the requisitions for new cotton rags are exceptionally brisk. Roofing stock has been rather quiet for a few days but the dealers state that this state of affairs is only temporary. The increases in all rags prices means that the better grades of bond papers and other lines, in which rags form a component part, will ascend accordingly. The whole paper situation never appeared stronger than at present and dealers and manufacturers expect to do a record business this fall.

#### Pulp Prices.

	F.O.B. Mill.
Groundwood pulp	\$30.00 to \$32.00
Sulphite, news grade	\$70.00 to \$75.00
Sulphite, easy bleaching	\$90.00
Sulphite, bleached	\$110.00 to \$115.00
Sulphate	\$87.50

#### Rag and Paper Stock Prices.

	F.O.B. Toronto.
No. 1 white envelope cuttings	\$5.20
No. 1 soft white shavings	\$4.00
White Blanks	\$1.50
Heavy Ledger Stock	\$2.65
No. 1 magazine	\$2.45
No. 1 book stock	\$1.55
No. 1 manilas	\$2.40
No. 1 print manila	\$1.25
Folded news	\$1.00
Over issue, news	.95c
Kraft	\$3.25
No. 1 clean mixed papers	.90c
No. 1 shirt cuttings	15-15½c
No. 1 unbleached cotton cuttings	13-13½c
No. 1 fancy shirt cuttings	10-11c
No. 1 blue overall cuttings	.10c
Bleached shoe clip	.13c
White cotton hosiery cuttings	13½c
Light colored hosiery cuttings	.11c
New light flannellette cuttings	.10½c
No. 2 white shirt cuttings	.12c
City thirds and blues (repacked) No. 1	.41c
Flock and satinettes	\$3.25
Tailor rags	\$3.50
Gunny bagging	33-4c
Manila Rope	51-53½c

#### NEWSPRINT PAPER BETTER IN FRANCE

Paris newspapers and those in most of the larger cities in France are printed on stock of a better quality than the average American newspaper," says Le Papier. "There is no apparent reason for this, except that the French people want a better newspaper."

#### NEW YORK MARKETS.

New York, August 30.—Reports from all corners of the paper trade describe the market as very active and firm, and as far as can be ascertained, there has been no statement of demand from consuming quarters. Users of paper of all kinds, apparently reconciled to prevailing high prices and evidently being of the belief that there is scant probability of values undergoing any reaction for a long time to come, are placing orders for supplies not only to cover immediate wants but also for a good time ahead. Considerable concern seems to be felt among consumers, if they fail to place orders, that when they come into the market later on in the season to buy they will be unsuccessful in obtaining deliveries in time to meet their requirements, and so to be on the safe side they are seeing to it that their orders are properly placed with manufacturers irrespective of when the latter promise to make deliveries.

Prices are strong in every respect. The current demand alone is a sufficient factor to uphold values on a firm level, but the fact that raw materials are advancing in price and that the cost of production otherwise is mounting also lends strength to quotations on the finished product. The newsprint market is in a very firm position, technically and from every other point of view. Publishers are using tonnages in excess of their contract supplies and are repeatedly coming into the market to purchase spot lots of paper to augment regular deliveries. Manufacturers display little apprehension over the pending investigation of the newsprint industry by a committee named by the United States Congress, which is scheduled to begin in New York during the next few days. Sentiment in regard to this inquiry among producers of newsprint paper is that publishers of newspapers would accomplish far more benefit to themselves and to the industry if they would endeavor to effect means whereby the production of paper in this country would be increased rather than in using their influence to urge Government officials to undertake investigations seeking in hold down prices on newsprint paper.

The fine paper market shows consistent activity and firmness. Mills are repeatedly advancing quotations on high-grade bonds and ledgers and have their hands full in supplying the wants of customers notwithstanding the fact that the great majority of them are operating at maximum capacity. Prices on bond papers range from 10 cents a pound upward, and on ledgers from 14 cents up.

A grade of paper which has been and is still in very active demand is hanging paper. The revival of building the country over during the past several months has created an exceptionally voluminous demand for wallpapers, and mills making this class of paper are rushed with orders and are being compelled to turn down business. The same situation is evident in the building paper industry. Felt mills through out the States are running at full capacity and are booked far ahead with orders not only from domestic consumers but from foreign countries as well. European buyers of roofing papers have been actively operating here for some time and have placed what is described as a "tremendous volume of business."

With merchants and retailers of various kinds laying plans for what is expected to be the largest pre-holiday business they have ever experienced, demand for wrapping and tissue papers is undergoing steady expansion and prices are hardening. Mills in some

7.5

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cases have contracted for practically all of their output for the remainder of the year, and yet the demand seems to be far from satisfied. Book papers of all kinds are firm in price and moving in heavy volume. Manufacturers are sold well ahead and are reluctant to accept further orders.

The board market retains its firm undertone although demand has sagged to quite an extent this week as a result of a general strike of workers in the box trade in New York City. Mills maintain their quotations, presumably in the belief that the strike will soon be settled and that demand will again assume the broad proportions existing up to a few days ago.

**GROUND WOOD.**—No recession of demand for mechanically ground wood can be noted. Consumers continue to show pointed interest in offerings and are quickly snapping up about all of the supply found available in the open market. Prices are strong at a basis of between \$30 and \$31 per ton at the grinding mills for spruce pulp of prime quality, and the tendency of quotations is firmly upward. With accumulations at both manufacturing and consuming points very low and with the next several months likely to be marked by short wood supplies and low water, predictions are freely made that prices will go much higher. Certainly demand shows no signs of abating, and if production is hampered even to the slightest extent, higher prices are inevitable.

**CHEMICAL PULP.**—The chemical wood pulp market is characterized by a firm tone and business of consistently good volume continues to be transacted despite the fact that demand has eased off somewhat during the past fortnight. Some consuming mills, evidently having covered their requirements for a short space of time ahead, have dropped out of the market, but other buyers have readily absorbed all the pulp that has been offered, and, if anything, prices have strengthened. Domestic bleached sulphite of standard quality is virtually unobtainable at present at less than 6 cents per pound at the pulp mill, and reports have it that some sales have been accomplished at a quarter of a cent higher. Newsprint sulphite is selling freely at \$70 to \$75 a ton, while domestic easy bleaching sulphite is readily fetching 4.50 to 5 cents per pound at the producing point. Kraft is firm and moving in increasing quantity at a price basis of \$90 to \$95 a ton for standard quality pulp. Foreign sulphite is being received in fairly large tonnage and is finding a ready market here irrespective of the comparatively high prices asked for it.

**RAGS.**—The movement of rags into consuming channels has continued to slow up and there is less business being done at present than for some time, yet prices are well maintained and sellers, claiming to have small accumulations on hand and expecting a sharp revival of demand in the fall, are frequently refusing to sell unless getting the prices desired. Writing paper manufacturers as a rule appear to have covered their immediate wants and are keeping as much out of the market as possible presumably anticipating that the steady flow of material from Europe will have the desired effect of lowering prices on domestic rags. Advice recently received from local rag dealers who are now on the other side of the Atlantic say, however, that available supplies in European countries are rapidly dwindling, and also that the keen competition on the part of the British, French and American buyers to secure material is gradually driving prices up to beyond the levels at which domestic rags are selling, in view of which it would seem that foreign rags are likely to play less of a role in regulating quotations on domestic goods than consumers here are prone to hope for. New cuttings especially are held firmly by local dealers and packers, while for that matter, few lots of old rags are being offered at prices which could be viewed as bargains.

**PAPER STOCK.**—The paper stock market rules firm and prices on several grades have climbed to new high levels for the present upward movement of values. Demand for low-grade paper has eased off to an extent as a result of the retirement of quite a number of eastern box board mills as buyers follow-

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mg the strike of paper box workers in this city, but there has been a sufficient volume of back orders in the market to keep business lively and to sustain quotations. Folded newspapers have sold at 1.15 cents per pound f.o.b. New York. No. 1 mixed paper at 90 to 95 cents per hundred pounds, white blank news at 1.75 cents and overissue newspapers at 1.40 cents, New York. Shavings rule notably steady at ranges of 5.25 to 5.50 cents for No. 1 hard whites and 4.40 to 4.60 cents for soft white shavings of No. 1 quality. Books and magazines are in active demand, both eastern and western mills being in the New York market for supplies, and sales of No. 1 heavy book stock have reported at 2.60 to 2.70 cents f.o.b. this city. Kraft and manila papers are firm in price and moving in a consistent manner.

**BAGGING AND ROPE.**—Old bagging remains in about the same market position, demand being restricted and prices ranging around a basis of 3 cents per pound f.o.b. New York for No. 1 serap. Important consumers are almost entirely out of the market, and dealers say that the orders they are booking seldom call for more than two or three carloads at a time. Old rope is notably higher. No. 1 manila rope has sold this week at 6.25 cents per pound New York, and sellers are now demanding at least this figure, with some asking 6.50 cents.

We are very glad to hear that Sindall & Bacon have developed a first-class paper weight scale and a paper folding tester. Canadian mills will be glad to get British made instruments when they become available—if they don't have to wait too long.

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Mr. J. I. Frank Anthes who has been with the Canadian Consolidated Rubber Co., Limited, since its inception in various executive capacities and finally as supervisor of purchases, has opened an office in the Drummond Building, Montreal, as a manufacturer's agent dealing in lines particularly suited to the Pulp and Paper trade.



He is the Canadian Representative of R. J. Caldwell & Company, Incorporated, New York, manufacturers of cotton dryer Felts and canvas clothing. He is also handling chemicals and is adding other similar lines shortly.

Louis R. Grimshaw, secretary-treasurer of the Canadian Crookers-Wheeler Co., St. Catherines, Ont., died on August 6.

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# Pulp and Paper Magazine

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## EDITORIAL

### ACCIDENTS CAN BE AVOIDED.

The old saw that "Accidents are bound to happen" was successfully disproved by the results obtained last month by the Spanish River Pulp and Paper Mills. In two of three mills not an accident occurred for one whole week, and in the third, the one mishap was due to carelessness, if not disobedience. The victim was playing ball in the mill and injured his hand in recovering the ball from the winder. We can imagine the joy of his fellow workmen in having their hard work and persistent effort thus robbed of a successful result. It seems to us that a company would be justified in discharging an employee who shows such flagrant disregard of the first principle of safety. A workman of that kind can not be considered dependable because he is not thoughtful. He does not think of the results of his action on himself or his fellows. A man of that kind, if he will not take heed of warning and instruction is more dangerous than an unguarded machine. One knows what a machine will do, but no one can tell what an irresponsible person will think of—or do without thinking.

That there was only one such careless person among the hundreds of employees of the company, is a source of wonder. That a persistent campaign of education and appeal brought such satisfactory results is cause for gratification, and the company is to be congratulated on the outcome of its no-accident week.

In achieving this success in eliminating accidents, it was necessary, of course, that there be fullest co-operation on every hand. The idea that a company tries to prevent accidents solely because it means better goods, greater production and less expense is entirely false and the few who seem to hold such a view are simply foolish. Is there a man at Espanola or Sturgeon Falls who would rather have his machine mate limping around with a crushed toe or hand-capped with a cut finger and feel obliged to do a little extra work to help him out than to feel that each man in his crew is able to do his own share of the work? Of course not. Neither is there a man there who is not glad he has all his fingers and toes so he can work and enjoy life as usual and not have to sponge on the good nature and good health of his fellows. All but one man at the Soo mill (considering only the results of the special week) are in that position and we don't envy that man, his condition, his relations to his fellows, nor the pain and loss of wages he suffered. The editor can speak with knowledge and feeling on this subject, having lost a piece of one finger in the calenders and much peace of mind in consequence.

One of the most important aspects of a campaign of this character is the fact that it successfully binds together in united effort toward a very important, as well as a very gratifying end all of the elements of the concern. It would be absolutely impossible for the management to achieve any such results without the splendid effort of the men in the mills. On the other hand the workmen would not be inclined to make any such strenuous effort to be careful had they not been inspired and encouraged by the attitude and action of the management. Safety First is essentially team work. There are few solitary jobs where a man has only himself to look after, consequently careful organization is necessary. That the organization of the Spanish River Mills for carrying through a No-Accident Week was efficient is shown by the results. What can be accomplished in one mill can be accomplished in others and a man who can be careful for one week can be careful for a month or a year or a life time. The man who has learned the value of his life and his limbs is in a fair way to appreciate the value of those of his fellow workmen and will endeavour to be careful for his neighbors' sake as well as for his own. That is true co-operation—the thought of others and the endeavour to make life worth living for others as well as one's self.

There are some who do not appreciate the returns in dollars and cents as well as in health and strength from being careful. The annual report of the Workmen's Compensation Board of Ontario shows that during the past year nearly \$4,000,000 was paid out in compensation. This means that almost the same amount of money was lost to those who suffered accident and no one can compute the loss in other ways to nearly 41,000 victims. As the average weekly wage of the injured workmen was \$19.06 and as the average length of temporary disability was 21 days we see that more than 40,000 workmen in Ontario lost an average of about \$9.00 a week for more than three weeks of the past year. It is further to be expected, that on returning to work they were not able to produce as much as formerly and in many cases it must have been necessary to adapt themselves to new jobs, some of which doubtless were less remunerative than the old ones since 2,549 accidents caused some degree of permanent disability.

A large proportion of the accidents covered by the Board were in the Pulp and Paper Industry and that in spite of a large amount of work that is being done to promote safe and sanitary working conditions in this industry. Since the Ontario Board has to do

with something over 500,000 workers and the accidents were over 40,000 we see that approximately 8% of the workmen in Ontario were injured during the last year and it is safe to assume that something like that proportion must have been injured in the pulp and paper industry. The No-Accident Week at the Spanish River Mills shows that it is possible to reduce the percentage of accidents to an almost negligible quantity and that it is only necessary for complete co-operation between the management and every workman to accomplish an absolutely clean record. At least it would have been for the sample week. There will occasionally be an accident due to defective machinery or some other cause entirely beyond the control of the personnel of the mill, but such causes are insignificant compared with the important results is accomplished. The result of six months continued effort is shown by the Laurentide accident report on another page.

There is another phase of the matter that should be considered and that is the attention that will naturally be paid to his health and the health of his family by the man who becomes habitually careful in regard to taking risks. We can also be assured that the example of the wage earner who has thus acquired, in the mill, the habit of being careful, will instruct and encourage those at home to do likewise with the result that the unfortunately large number of accidents resulting from carelessness in the home will be greatly reduced in the future. A man's work cannot be considered entirely apart from his home and the effect of proper habits must necessarily extend to the members of the family who are directly affected by anything which impairs the efficiency of the wage earner. Thus we find that an effort to improve conditions in the mill makes for better living throughout the whole community and one of the most important results is accomplished.

The experience of the largest producer of newsprint in Canada cannot help but serve as an example to the other mills of the Dominion. The Ontario mills have the advantage of a Provincial Safety Association and a series of No-Accident Weeks will no doubt be arranged throughout the province and it is fortunate that such a successful outcome of the first attempt of the kind can serve as a basis. We look to see very gratifying results from other centres and only regret that the No-Accident period is so short. Perhaps it is just as well however, to make good with a small beginning and eventually extend the length of time to a month and then to a year. By that time we should certainly have a model industry as regards working conditions. It is to be regretted that other provinces have no central organization to encourage work of this kind and a friendly rivalry in regard to safe practice. And this is not the only lack in not having such an organization elsewhere. One of the most important features of the central organization is the ex-

change of data on the causes, results and remedies of industrial accidents. It is to be hoped that at the coming meeting of the Pulp and Paper Association more successful steps will be taken toward the establishment of a Safety Section in the Association.

Again, our congratulations to the men and management of Spanish River Pulp and Paper Mills and to M. A. P. Costigane, secretary of the Ontario Pulp and Paper Workers Safety Association, who labored so hard and well for the results obtained.

### COBWEBS.

The pulp and paper industry may well be proud of the attractive and instructive exhibits at the National Exposition in Toronto. The editor had a chance last week to pay a hasty visit and was pleased to see these exhibits and the interest of the public in them. The five booths were distinctly different and each illustrated an important phase of the industry. The booths of W. J. Gage & Co and the Interlake Tissue Mills showed the finished writing paper and tissue products while the Spanish River Pulp and Paper mills and the Abitibi Power and Paper Co., the largest producers of newsprint in the province of Ontario, showed the process of making this important product, each in a different way. The exhibit of the Forest Products Laboratories, assisted by a number of mills, showed more particularly the steps in the manufacture of various kinds of pulp, and also showed kraft paper. This whole field was well covered and a large number of the million people who visited the exposition will now have a better appreciation of the industry and what it means to Canada. Education is worth while.

We heard once of a bootblack who trained his dog to track mud over the shoes of approaching pedestrians so as to induce them to have a shine. There seems to be some force at work keeping newsprint investigations going. The Ottawa hearing, scheduled for last week was postponed to next Wednesday. American manufacturers, consumers and lawyers are also sharpening their pencils for the coming investigations. One probe sets the stage for another. What will come of the affair in Ottawa no one knows, neither is it possible to say it will be the last of the hearings. However, it hardly seems likely that the hearing will show that the cost of production of newsprint jumped from the high cost months preceding July, when the \$57 price prevailed, to the time of the low cost months immediately following, when the Tribunal has decreed, \$66 is a proper price. If the conference touches on the adjustment of over-payments and under payments, differentials, and such, it might be just as well to defer refunding anything to anybody till the whole account has been canvassed.

The Victory Loan 1919 is the next big thing on the program of National events. Let it be the big thing in provincial and private affairs as well.

# Fireman Premium and Fireman Efficiency

By OLOF RODHE, Mining Engineer.

(Translation from Teknisk Tidskrift by G. Hallberg.)

A number of excellent articles have appeared in the last few years in American power journals on boiler house efficiency and economy. A Swedish enquirer presents in this article some points that may be applied rather generally. It is to be hoped that the coming winter will not bring any such crisis in coal supply as many of our mills have faced during the past few years. The recent coal famine has shown the mills how wasteful of fuel they have been—and many still are—so the present discussion may do some good in suggesting ways of conserving on this important material.

The cut showing the Log Sheets is taken from Power and the other illustration from the original Swedish article.—Ed.

A difficult and important matter in almost every industry is the economical management of the power station, and especially in steam power stations, it has always been a problem how to make the fireman effectively interested in an economical steam production. "The economy lies in the boiler house," is an old saying, agreed to by every steam expert, but owing to practical difficulties, the economical management of the boiler houses has not been carried through in practice.

Of late a strong movement has taken place to improve the economy in such places where it will be effective without necessitating too expense changes and improvements. To this purpose considerable work has been done to find methods indicating to the fireman how he succeeds in his work, and thus create an interest on the part of the fireman in his work. It is not surprising that this very commendable work has not succeed better than it has, taking into consideration the reservation, if not to say hostility, with which every new idea has to struggle, and in this case the struggle has been hard.

But it has been shown that a better economical operation of the boiler house can be obtained by the use of a practical, reliable method of computing premiums for firemen for work well done.

One of the reasons for the failure of so many of these premium methods is that the premium is based upon a figure which is influenced by too many conditions of different nature, for instance coal consumption. It is at times hard to tell the reason for a smaller coal consumption, whether it is more careful work on the part of the fireman or a favorable load on the boiler house or some other reason.

As is well known, the economy of the boiler house is largely dependent upon loss caused through the combustion products; a continuous control of these products and their content of  $\text{CO}_2$  will control the efficiency of the boiler. The higher content of  $\text{CO}_2$ , up to a certain limit, the higher the efficiency and vice versa. The limits within which the content of  $\text{CO}_2$  usually should be kept for economical firing are 10-12%. It is a natural conclusion from the above remarks to base the fireman's premium upon the content of  $\text{CO}_2$  so that he receives his premium for the time he has kept the proper  $\text{CO}_2$  percentage on his boiler;

the premium should be so liberally figured that it encourages the fireman to continue to run his boiler in the proper way.

A good premium system should not only give the fireman a liberal premium for good firing, but should also give an indication of the skill of the fireman; a figure which can be used not only in the one boiler plant, but which can be used for comparison between firemen in different boiler plants. Such a system would be the means of promotion for a good fireman, and my opinion is that it would be widely adopted.

In connection with the installation of the Mono apparatus for control of combustion, I have worked out a method which fills the above mentioned demands upon a premium system; it is a practical, easily made calculation of the premium, and is so arranged that it keeps up the interest of the firemen, at the same time giving in the "Fireman Efficiency" figure a definite expression of the skill of the fireman.

## Points A and B and Premium Points.

Every hour on the Mono diagram is divided in 16 parts or points and the fireman receives 16 points (A) for each hour during which he keeps between 10 and 12%  $\text{CO}_2$ . If the content of  $\text{CO}_2$  in the same example is between 8 and 10% or between 12 and 14%, the fireman does not receive any points; if the  $\text{CO}_2$  percentage goes below 8% or above 14% the fireman gets corresponding deduction (B) from the points (A) which he has received for a  $\text{CO}_2$  percentage between 10 and 12%. The difference between A and B (A-B) is called premium point (p.) (Regarding the reading of the number of points on the Mono diagram, see below under heading "Mono-scale.") It may happen, on account of certain characteristics of the boiler plant, that A and B must be calculated for other  $\text{CO}_2$  percentages than above mentioned.

Example 1. (See diagram 1.)

The Mono diagram covers a shift of 8 hours. During this time about two firings per hour have been made and the number of 16th hours during which the  $\text{CO}_2$  has been between 10 and 12% is 40 i.e.,  $A=40$  points. The  $\text{CO}_2$  has been above 14% and below 8% during 28 16th hours, i.e.  $B=28$  points. Consequently premium points,  $p=40-28=12$ .

Example 2. (See diagram 2.)

Number firings pr. hour: 4  
During a time of 8 hours  
 $A=52$ .  
 $B=32$  consequently  
Premium points  $p=20$ .

## Premium.

For the above mentioned premium points the fireman receives a certain constant premium for each point. This premium is in proportion to the profit the boiler house derives from the great proficiency of the fireman as shown by the Mono control.

Say that the coal consumption for normal load is K ton per hour at a coal price of C Crows.

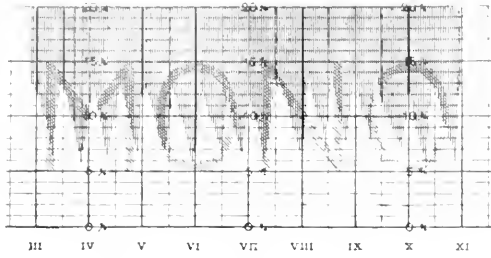


Diagram 1.

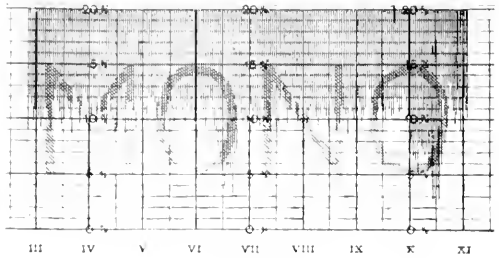


Diagram 3.

With the Mono control a plant can easily save 10% of coal consequently 0.1 Crown K Crowns.\*

Of this saving the fireman should receive for instance 10% as premium

$$0.01 \times \text{Crown K Crowns per hour or } \frac{\text{Crown K ore}}{16} \text{ per point.}$$

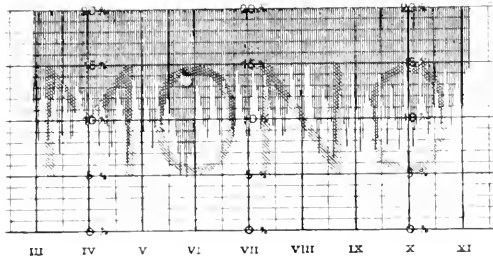


Diagram 2.

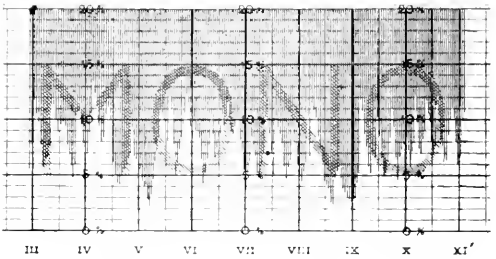


Diagram 4

If the coal consumption,  $K = 0.5$  tons pr. hour and the price pr. ton coal,  $C = 15$  Crowns, i.e., the cost of coal pr. hour 7.50 Crowns, then the premium per point,

$$P = \frac{15 \times 0.5}{16} = 0.5 \text{ ore.}$$

According to example 1, the fireman got 12 premium points and consequently his premium =  $12 \times 0.5 = 6$  ore.

According to example 2 his premium will be  $20 \times 0.5 = 10$  ore.

Example 3. (See diagram 3.)  
Number firings pr. hour, 5 - 6  
during a time of 8 hours

$$A = 75$$

$$B = 16$$

$$p = 59$$

Premium pr. point; 0.5 ore.

$$\text{Premium; } 0.5 \times 59 = 29\frac{1}{2} \text{ ore} = 0.30 \text{ Crowns.}$$

Example 4. (See diagram 4.)  
Number firings pr. hour, 2 - 4,  
during a time of 8 hours.

$$A = 31$$

$$B = 72$$

$$p = 41.$$

For this shift no premium can be paid.

It should be noted that premium is paid for each shift or for a period of time previously fixed, for instance from 12 o'clock to 12 o'clock.

That part of the diagram which corresponds with a

\*1 Crown = 100 ore = approx. 27 cents.

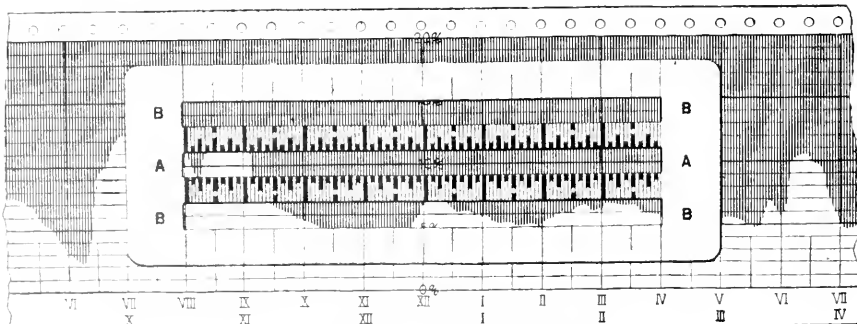
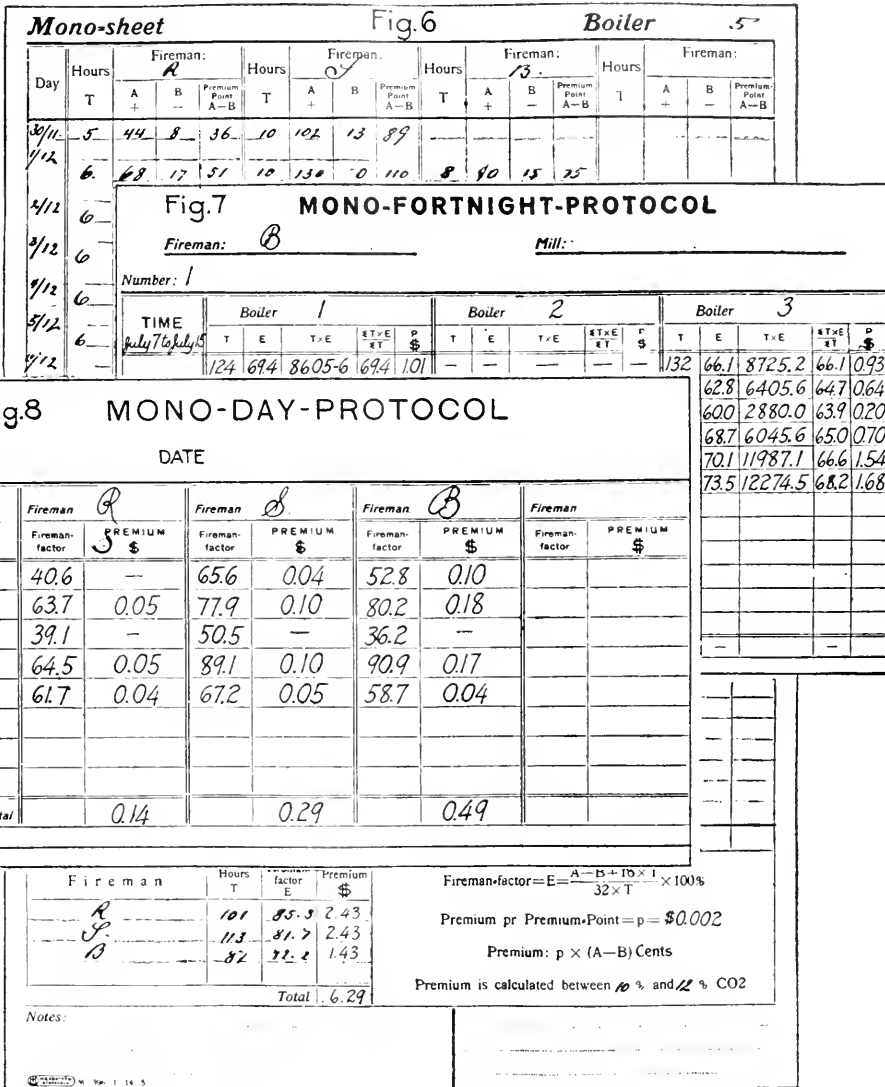


Fig. 5. Showing use of Mono Scale.





period when the boiler house can not be effectively operated, for instance, at lunch time or at occasions of comparatively small steam consumption, should be excluded from premium calculation.

**Fireman Efficiency.**

What is fireman efficiency? The expression is new, but I consider it to be one which every engineer should include in his vocabulary.

How have we so far been judging a fireman? The characterization of skill, for instance good, never tells us how the fireman looks after the economy of the boiler house, i.e., to what extent he can reduce the coal consumption. Why? Because, here as everywhere, one must have something definite to compare the fireman with, a certain graduation. If we look at a Mono

diagram where the CO<sub>2</sub> percentage is recorded during the time the firing has taken place, we find that the variation of the percentage of CO<sub>2</sub> is considerable and we also know that the ideal is that the curve made of these percentages should be as straight as possible and should be within certain limits.

These limits can generally be said to be 10 and 12% and consequently the fireman efficiency at such a boiler house is 100%.

If A = number of points for CO<sub>2</sub> percentage between 10 and 12% during the time the fireman efficiency is calculated,

B = number of points for CO<sub>2</sub> percentage below 8 and above 14% during the same time,

T = the time in hours during which the fireman efficiency is being calculated, then,

$$A - B + 16 \times T$$

$$\text{Fireman efficiency } E = \frac{A - B + 16 \times T}{32 \times T} \times 100\%$$

Example 5. See example 1 and diagram 1.

$$A = 40; B = 28; T = 8$$

$$40 - 28 + 16 \times 8$$

$$E = \frac{40 - 28 + 16 \times 8}{32 \times 8} \times 100 = 55\%$$

Example 6. See example 2 and diagram 2.

$$A = 52; B = 32; T = 8$$

$$52 - 32 + 16 \times 8$$

$$E = \frac{52 - 32 + 16 \times 8}{32 \times 8} \times 100 = 58\%$$

Example 7. See example 3 and diagram 3.

$$A = 75; B = 16; T = 8$$

$$75 - 16 + 16 \times 8$$

$$E = \frac{75 - 16 + 16 \times 8}{32 \times 8} \times 100 = 73\%$$

Example 8. See above example 4 and diagram 4.

$$A = 31; B = 72; T = 8$$

$$31 - 72 + 16 \times 8$$

$$E = \frac{31 - 72 + 16 \times 8}{32 \times 8} \times 100 = 34\%$$

Fireman efficiency should be calculated for longer periods of operation, for instance one or two weeks, so as to obtain a good average figure on the fireman's work during that time.

#### Mono Scale.

For reading of A and B points the so-called Mono

scale is used. This scale covers 8 hours on the diagram and each hour is divided in 16 parts or points. A points are read in the middle field of the Mono scale, the scale being placed so that this field covers the percentages between which the A points are figured, usually 10-12%. The B points are read in the upper and lower field of the scale for the same period of time. The application of the scale to a chart is shown in Diagram 5.

#### Fireman Premium and Fireman Efficiency in Stationary Boiler Plants.

Each plant with a Mono installation keeps a log sheet with columns for A and B and the premium point A-B if the latter is positive. For each day the columns A, B, premium point and number of hours T are added up. The fireman's name and the amount of the premium are placed below. The amount of the premium is arrived at by multiplying number of premium points with the fixed premium.

The fireman efficiency is also figured out and marked down on the log sheet. Consequently the fireman receives his premium together with his wages and is also given the fireman efficiency for the corresponding period of time.

It is clear that this information will be a spur to the man to do his best in his work. If each boiler is controlled by a Mono instrument, each fireman on each boiler will get a fireman efficiency figure and it will be easy to see by comparison between the fireman's figures from different boilers if any of the boilers need repairs of some kind or other.

#### GRINDING OF WOOD FROM YOUNG AND OLD TREES.

Green or freshly cut wood is known to yield a more desirable groundwood pulp than seasoned wood. It is not unnatural to assume, therefore, that a similar difference might occur in the grinding of wood from very large trees, which contain a large proportion of heartwood, and smaller trees of the same species. This assumption has been verified by the Forest Products Laboratory, at Madison, Wis., in a series of commercial grinding experiments on wood from large and small white fir (*Abies concolor*), grown in Plumas County, California. Paper was afterwards made from the pulp on the laboratory machine, and tested for strength and color.

The small or young wood was cut from trees 18 inches or less in diameter, and the large or old wood was split from a single tree 40 inches in diameter and 130 feet high. Under like grinding conditions, the actual solid volume of old wood ground was, in every instance, appreciably less than the volume of young wood ground in the same time.

In brief, the tests demonstrate that (1) there is a considerable difference in the quality of pulp produced from white fir, depending upon whether the wood is taken from old or from young trees, and (2) the advantages as regard production, power consumption, strength, and color are all in favor of young wood.

As the average groundwood pulp from white fir was found to be darker or duller than is desirable for many grades of paper, it is entirely possible that a provision for sorting the young wood and grinding it separate from that taken from large trees would result in improving the color and quality.

#### RAPID METHOD FOR MAGNESIUM.

By F. W. BRUCKMILLER, Lawrence, Kansas.

The following method for magnesium has been tested and found to give good and reliable results in its application to the analysis of limestones and clays.

Remove the silica and calcium in the usual manner and after evaporating to dryness to get rid of the excess ammonium salts and filtering proceed as follows:

Make up the filtrate to at least 100 c.c. volume and make distinctly alkaline with  $\text{NH}_4\text{OH}$ . Cool by placing the beaker into ice water and then add an excess of microcosmic salt solution. Stir vigorously and for some time until the magnesium has all come down and then add 10 c.c. of  $\text{NH}_4\text{OH}$ . The more the stirring the better will the precipitate settle and the sooner will it be ready to filter. Filter through a suitable filter paper and wash by decantation several times using 3 per cent ammonia water. It is not necessary to wash the beaker clean for the contents of the filter paper are washed by means of hot water into the beaker in which the precipitation took place and the whole solution boiled until the ammonia is driven off. Methyl orange indicator is added and the solution titrated with a standard solution of  $\text{HCl}$ . The strength of the solution to use will depend upon the quantity of magnesium present. The following factors will convert cubic centimeters into grams of magnesium:

1 c.c. 0.10 N $\text{HCl}$	0.00120 gms. Mg.
1 c.c. 0.05 N $\text{HCl}$	0.00060 " "
1 c.c. 0.02 N $\text{HCl}$	0.00025 " "

—From "The Chemist Analyst."

When hurry interferes with safety, take your time.

# Machinery for Pulpwood Operations\*

By F. E. PEMBER, Bangor, Me.

Thousands of people who used to be working all day now have leisure. You ask why, and my answer is that with the use of machinery to-day we are manufacturing articles that were heretofore made by hand, the public demanding and accepting them as a staple, standardized product of America.

What is the use of a machine? A few only realize that the woods are full of them, brought about by an ever increasing industry—paper making. It is necessary at this point to show the growth and progress of paper manufacturing to prove to you that machinery has "taken the tote road and gone to camp."

September, 1690, marked the actual beginning of the paper industry in the United States by the construction of the first paper mill by Wm. Rittenhouse, near Philadelphia. A second mill was a direct out-growth of the Rittenhouse mill and was built in 1710. A third mill was built by Willeox in 1729. Starting a paper mill in those days was a serious affair, and for some unknown reason there were three mills in Pennsylvania and one in New Jersey before the first mill was built in New England, which was about 1730 and located near Boston.

Paper making did not keep pace with paper using and there was a decided scarcity from 1700 on. Rays then constituted the essential fundamental for the industry. Experiments had been made with other materials, but nothing had been discovered as an available substitute. After the Revolution paper making was still confined mostly to Pennsylvania, New York, Connecticut and Massachusetts. Between the year 1790 and 1800 there were four patents granted relating to the paper making industry, one of which was John Biddis' patent for making paper and pasteboard from sawdust. In 1800 there were a few more than 100 paper mills, and then came the advancement in machinery. Feeling the stimulus the mills of the East grew in size and importance and in 1840 there were 426 mills. In 1850 there were 443, in 1860 five hundred.

In March, 1867, wood pulp was made near Stockbridge, Mass., and this was the beginning of the great pulp process that has in less than half a century rendered useless the efforts to utilize pulp material from most other sources.

In 1870 there were 677 pulp mills and in 1880 seven hundred forty-two, in 1890 six hundred forty-nine, in 1900 seven hundred sixty-three, in 1914 seven hundred eighteen which, with modern machinery expansion, the rise of big corporations, and the growth of foreign trade, had 100,000 employees. To supply these mills with pulpwood is no small undertaking, it requiring a combination of capital, labor and brains. Capital can always be found; labor less often, and brains—well, we are not all gifted, so I will return to the prime factor, the main spring of every pulpwood operation—machinery. Why are machines made? To save time, trouble and money. This they do, but not always. Worst of all, the better the machine the less it uses our intelligence.

Transportation has always been a serious drawback and hindrance to what might otherwise have been a

successful operation, weather conditions varying to such an extent that the shrewdest logger's plans have failed again and again. However, mechanical ingenuity has now advanced so that to-day we are able, with the use of railroads, the truck, the tractor and log hauler, to cope with whatever situation may arise and in so doing the mills are now assured that the supply they require can be obtained and eventually, at a price consistent with the demand.

In the saw mill, the harness room, the wood working, machine and blacksmith shops, the garage and camp, we find an infinite amount of machinery all of which is called upon each year to supply the needs of every operation and to do their part in furthering production. The telephone, automobile, sawing machine, barker, stacker, gas and steam engine have all proved their value in the woods and are there to stay, although some modification is necessary. This is but a partial list of the machinery found in pulpwood operations.

## Must Make Mechanics Out of Woodsmen.

New machinery and changes in methods of operating are giving considerable impetus to production. In fact, as time changes men and machines must also change. The introduction of new machinery is apt to cause an exhibition of the characteristic antagonism of woodsmen, yet we must continue to progress. Consider for the moment the four-horse teamster who came down the mountain with the record load and without sluing. Has he changed? No. Would you put him on a tractor to go over the same ground? The teamster of a few years ago must be the mechanic of to-day, efficient, confident, determined, reliable, if he is to succeed and get results.

During the last two years the U. S. government has trained one hundred thousand men in mechanical pursuits previously unknown to them. This is our chance, as well as duty, to make sure that this education, instruction and experience which they have had is not wasted; by doing this we will be able to raise the standard of woods organizations to a level with the manufacturing end.

Quite frequently emergencies arise that make it necessary to construct machinery for special purposes, this usually being done hastily and with material at hand, perhaps odd or of old design. Doubt and opposition at once appear before the finished product has been tried, approved or accepted, yet these machines usually succeed in establishing themselves in substantial favor due to the inexpensiveness and satisfaction to the operator. If more use were made of the spare pulleys, sprockets and shafting lying idle wherever we go, our foundry and machine shop costs would materially lessen.

At the present time we have a class of followers that are often found to be ignorant, violent, intolerant and they are so many that the few wiser ones who ought to guide them are forced to follow. Shall we allow men to be destructive because they do not understand? No. We are going to educate them, supply trained men and then apply more power.

Machinery is sometimes destructive, causing loss of limb, destroying the senses and sometimes life. Analyzed, it is usually the lack of education or an accident.

Inventions generally have ranged over a rather nar-

\*Paper read at the meeting in July of the Eastern Forest Products Association.

the grown man, the trained mind, has to use the inventive impulse which has made man work in future possibilities. Several improvements have been made to fall and cut up trees in a variety of ways otherwise. Barkers of various types are being used but as yet not a portable one to stand hard service. We have seen many cutting up machines, but not a machine adapted to our forests.

The foregoing gives but the merest suggestion of the activities in pulpwood operation, but without the machine we would be blindfolded, hog-tied, and banished by popular vote.

Note:—Mr. Pember has given us here a glimpse of the future of woods operations. It is significant that he has taken the pulp and paper industry rather than the saw-mill as the subject of his applications. Evidently the domination of the forest by lumber is past or passing.

Some interesting possibilities of machine development are indicated and this is a field for cultivation by the manufacturer, with the co-operation of the special committee of the Woodlands Section on logging machinery and the committee of the Technical Section of the Canadian Pulp and Paper Association on Mechanical Standards. This trio should be able to suggest, build and develop a line of mechanical devices that would put woods operations on a basis of reliability and efficiency of the same order as prevails in the mill, although the latter has a big handicap.

The Pulp and Paper Magazine will be glad to serve the industry by printing comments and suggestions from woodsmen on this subject or by notes on the experience of those who have tried out various types of machinery applicable to woods operations and preparing pulpwood.—Ed.

### WAGES IN GERMAN PAPER MILLS.

The U. S. Department of Commerce has received the following information upon wages paid in German paper mills to common and unskilled laborers in 1914-1916:

March to September, 1914—Male, 12-hour day; marks, 3.94 per day.

March to September, 1914—Female, 12-hour day; marks, 2.29 per day.

March to September, 1916—Male, 12-hour days; marks, 5.54 per day.

March to September, 1916—Female, 12-hour day; marks, 2.94 per day.

Taken from Vierteljahresheft zur Statistik des deutschen Reiches, 1917.

December, 1918:

Males over 20 years, marks 1.00 increase per day; 8-hour day.

Males 18 to 20 years, mark .80 increase per day; 8-hour day.

Males below 18 years, mark .50 increase per day; 8-hour day.

Females over 18 years, receiving marks 4.50 or more per day, marks .50 increase per day; 8-hour day.

Females over 18 years receiving less than marks 4.50 per day, marks .80 increase per day; 8-hour day.

Females under 18 years, increase of marks .40 per day; 8-hour day.

Taken from Der Proletariat of February 15, 1919, 2d labor part of Hanover.

Some information as to machine tenders is not given. From Paper Trade Journal, August 7, 1919.

### A PLEA FOR BOOKS IN PAPER BINDINGS.

A fortnight spent on my back in hospital has convinced me that the average British-made book is an unwieldy, myielding, uncomfortable thing to read in bed.

It is nearly as awkward to handle anywhere else; it does not open out and keep open with ease, as a good book should.

Why is it?

We are first-rate printers—probably the third best in the world—but as a rule when we come to the production and binding of a new volume we spoil everything by thickness and clumsiness.

A publisher who was making a valiant effort to produce new books of handy and readable size and shape told me he was obliged to abandon the idea in very quick time. It was killed by the average novel reader.

His books, offered in suitable format, such as discriminating lovers of "belles lettres" look for, were ruthlessly turned down by the librarians.

"We could not sent out things like those to our clients," he was told. "What they want are volumes that turn of scales at about a pound avoirdupois and are quite two inches thick. Your covers, too, though perhaps tasteful, are useless.

So my friend had to fall into the rut, and now turns out his new books "by the pound," as everyone else has to do.

There seems to be an uncontrollable mania for binding the commonest, most worthless productions in cloth. I have seen some horrible examples lately sent out for the use of the troops.

Surely the main reason for a cloth cover is to preserve what it encloses, but the meretricious trash vilely printed on the coarsest repulped paper could never, by any stretch of imagination, be worth a better fate than the rubbish heap, and that at the earliest possible moment.

I never could understand why the majority of new books published do not appear in paper bindings.

The French, the Spanish and the Italians never dream of launching new untried works in elaborately decorated or gilded heavy cloth covers, nor do they seek to give undue bulk to such volumes.

It is quite time enough for special bindings when a work has become an established favorite—if not a possible "classic."

A publisher once told me that at least half the outlay on producing a new novel was in the cloth cover.

Is it needed? Without it new books should reach the public at half their present price.

Besides being cheaper, they would be more pleasant to handle and read.

Then that comparatively rare thing—the book that one feels could be read again with pleasure, that one would like to live with as a companion, can easily be found in whatever style—cloth, vellum, morocco or what not—just as one thinks appropriate.

It can be bound uniformly with other treasured books in one's library, and inside one many paste with pride one's own particular bookplate—C. P. Sisley, L.D.M. in Toronto Times.

Hamilton & Hansell Inc., Park Row Building, New York exporters of wood pulp announce that they have changed their firm name to the "American Transmarine Company, Inc." The new company will continue business in the same way as the old company.

## Poor Packing of Export Paper

More Evidence on Old Subject.

American methods of packing goods for export have been criticized for many years, and that the manufacturers of paper are not exempt is indicated by the following extract from a letter sent by the Bureau of Foreign and Domestic Commerce to Secretary Steward of the American Paper and Pulp Association:

"Our Trade Commissioner in Colombia, Mr. P. L. Bell, has just reported on a shipment of newsprint paper that arrived in Medellin, Colombia, in rather poor condition. The shipment consisted of 50 bundles, of 2 reams each. The gross weight of each bundle was 38 kilos. The paper was cut to newspaper size and packed in cylindrical bundles, three folds, wrapped in heavy building paper, folded at the ends and tied with heavy cord similar to any bundle. Previous shipments of this same paper were always wrapped with an extra heavy paper of two thickness at the end, the point at which the rolls received practically all of their damage.

"Since the paper is cut to newspaper size the least damage or fraying of the ends of the rolls renders the paper unfit for printing and makes it a dead loss as the paper is of too low grade to pay for re-cutting and use for other purposes. Mr. Bell says that special attention should be paid to the protection of the ends of the rolls; that a double thickness of heavy paper should be used on the ends or else a light round board inside of the burlap and wrapping."

### Suggestions by Mr. Chable.

Vice-President Chable, of American Paper Exports, Inc., recently wrote as follows to paper manufacturers who are interested in export business:

From a number of places to which we have been shipping paper we receive very serious complaints regarding the condition in which the shipments arrive on account of very defective packing. Something must be done by the Paper Industry of America, which has for long years been accused of not knowing how to pack goods as well as its European competitors have packed them, in order to redeem its reputation.

One of our correspondents who is taking a large amount of paper from us writes:

"Of the cases I have received in the last three weeks about 75 per cent arrived in extremely bad condition, and about 10 per cent did not arrive as cases. The paper was brought into my warehouse loose owing to the case having given away entirely. The loss in these last is very heavy indeed. The iron banding on some of the cases was only  $\frac{1}{4}$  inch broad, and it is impossible that a case containing from 5 to 600 lbs. of paper, with this banding, can hold together in the handling which it received. Also the lumber used in many of the cases is extremely poor."

Please allow us to call your attention to the fact that we cannot hope to hold our trade in export until we learn how to pack properly; in fact better than our competitors. The greatest attention must be paid to this question of packing, and we are making the following suggestions.

The lumber used must be strong and free from cracks. In many cases the lumber used now is not fit for cases carrying 500 lbs. or more.

As a general proposition cases should not weigh more than 500 lbs. and the absolute maximum must be 600 lbs.

Instead of two iron bands as used now, there should be three; the third being passed over the centre of the case. Moreover, where cases are longer than usual, two iron bands should be passed over the centre, and the iron band must be  $\frac{3}{4}$ -inch broad and of heavy caliber.

No empty space should be left inside the cases. If such empty space exists the paper is shaken about in transit, with the result that the ream wrapping (if any) is destroyed, and the paper is wrinkled and seriously damaged. When paper is not ream wrapped the damage is even greater.

Where bales are used, the tops and bottoms should be well protected by boards and these held securely by strong iron bands of  $\frac{3}{4}$ -inch width in the same way as suggested above for the banding on the cases. The sides should be well protected by two thicknesses of strong wrapping paper, although preferably by burlap.

Bundles must always be protected by two thicknesses of thick and strong wrapping paper. The use of only one thickness inevitably results in serious damage to the paper. The strings should be strong and well tied



Scandinavian Paper in Chile.

with knots wherever they cross, and there should be two crossings of the bundle in two different places. The use of string that easily stretches is a serious mistake for the failure to draw it well taunt inevitably results in its being so slackened that the whole bundle becomes very loose and goes to pieces.

We respectfully urge upon you the absolute necessity of paying the greatest attention to the packing question, as otherwise we must inevitably lose the trade which we have as an industry, and cannot take a permanent place in the markets of the world, where we have been given a chance to export our wares.

The "Paper Mill" says the accompanying picture was taken personally by George Gayan, a representative of the New York Overseas Company, who recently returned from Chile, where he spent some time in the interests of the company. This picture shows how a shipment of news rolls was received from Scandinavia, and it is this kind of packing that is taking the paper trade away from American exporters.

This representative received comments from the Chilean paper merchants, and they stated that they were perfectly willing to pay the additional cost for good packing, so as to receive the merchandise in a good condition, than to place orders with American manufacturers and then be compelled to pick up the

**TECHNICAL QUESTIONS**

(From La Papeterie)

paper from the floor of the Custom House in a deplorable condition. Mr. Gayan also pointed out that there was one merchant in particular who refused to take delivery of a shipment of paper on the ground that it arrived in such poor condition, with the result that the paper was found to be torn, dirty and unfit for use. The exporter in America has demanded payment for the paper, but the foreign customer has refused acceptance, and in the meanwhile the goods are on the floor of the Custom House in Chile. Despite this incident, the New York Overseas Company representative reports that the Chilean merchant is willing to buy in the American market if he can be assured that the paper he orders will arrive properly packed.

The American exporters cannot remedy these conditions without the assistance of the mills. He must have the co-operation of the mill; and if this co-operation can be assured, there is no reason why the volume of trade with the South American countries gained during the war cannot be preserved. All that is needed is a little trouble on the part of the mills to study the particular requirements in the export line of paper. If this is done, and it surely can be done, American trade with all parts of the world will continue to take on volume.

**BRITAIN'S INDUSTRIAL FUTURE.**

After giving his reasons for believing that neither in shipbuilding nor in foreign commerce can America overtake Great Britain, Mr. E. Mackay Edgar, head of Sperling & Co., London, says, in an article in Sperling's Journal, the organ of the company:

"Again, America is reaching the end of some of her most valuable raw materials and natural resources. Already she is importing oil for her own consumption; she will soon be importing copper — perhaps even wheat. Her 'magnates' are rightly and shrewdly looking ahead and scouring the world for reserves of basic metals and minerals that will make good their own dwindling supplies; but wherever they turn they find that British enterprise has been before them. We hold many of these essential key positions in our own hands. Even if they do not lie inside the British Empire, they are controlled by British capital. America one of these days — and not very distant days, either — will have to come to us for the oil, copper and perhaps the iron ore she needs, just as she has come to us for wool. That is why I, for one, am not greatly disturbed by America's competition."

Mr. Edgar might have mentioned some other things, including certain products of the forest. In this and other respects, Canada and the United States have already acted along the lines he suggests in the following words regarding England and America:

"What it really comes to is that we are in the same boat and have everything to gain by pulling together. Commercial partnerships and understandings between groups of Englishmen and Americans who are engaged in the same lines of business are in my judgment the most fruitful form that an Anglo-American alliance could take."

Because you may be so fortunate, or rather unfortunate, as to have inherited an unusually strong constitution, or to be so constructed that bad habits do not tell at once, do not be so foolish as to abuse your good luck; do not be so short-sighted, or so neglectful of your health, as to do things every day that decrease the wear and tear on the body and add to health.

Question.—I have just started working as foreman in a mill making semi-fine papers. I notice that there are many breaks in the dryers but hardly any at the wet presses. The tension of the sheet varies astonishingly at the dryers. There are also many breaks at the calenders. Could somebody tell me what percentage of broke should normally occur at the dryers and at the calenders?

Answer.—To give a satisfactory reply it would be necessary to see the machine under working conditions for some time. The following causes of breaks, however, are often overlooked. Owing to improper draining of the condensed steam in the dryers the action of the latter is not uniform and consequently the dryness of the paper varies. The dryers are sometimes of uneven thickness, causing uneven drying of the paper. There may be a certain amount of play at the ends of the dryer journals or in the gears, giving rise to large variations in the tension of the paper. If the dryers do not turn true there will also be a variation in the tension.

Answer 2.—The fault lies with the wet press and the lack of skill or of goodwill of the machine tender. The pressure should be steady and even on both sides of the wet press, and there should be a good steady pressure from there to the dryers. If you cannot increase the pressure slow down the machine.

Answer 3.—The dryers should be closely watched and the steam pressure adjusted to the quality of paper and maintained as constant as possible. The dryers should be true and parallel. The percentage of broke will vary according to the composition of the paper, its thickness, and the degree of refining of the pulp. The following may be considered a good average for printing paper, rather heavily loaded, and made from chemical pulp.

Wet broke at the presses . . . . .	Usually insignificant.
Broke at the dryers and winder . . . . .	0.45%
" " " cutter . . . . .	2.00
" " " sorting room . . . . .	5.05
" " " calenders . . . . .	0.50
<b>Total . . . . .</b>	<b>8.00%</b>

Percentage of broke according to strength:—

Weight per sq. meter. . . . .	40	50	60	70	80	90	100
% broke . . . . .	10	9	8	8	7	7	6

(Note by the Editor de La Papeterie—the broke seems excessive in the sorting room and exceptionally low at the dryers.)

Question.—What precautions must be observed in order that the transverse strength of paper shall approach as nearly as possible to its longitudinal strength?

Answer.—In order that the strength of the paper be the same in both directions it would be necessary that the fibers arrange themselves to an equal extent in both directions. This is impossible in practice, most of the fibers placing themselves in the direction of the travel of the sheet. To obtain the desired results the shaking must be carefully adjusted both as to frequency and amplitude. Another factor requiring careful adjustment is the suction; if it is too great there will be breaks; if too small, creases; though it may not be sufficiently great to break the sheet, it may nevertheless be greater than it should, in which case the strength of the paper will be greatly diminished.—A. P. C.

## Paper Exhibits at the Canadian National Exposition

The Canadian National Exhibition, Toronto, attracted a larger and more representative attendance this year than ever owing to the favorable weather, the visit of H. R. H. the Prince of Wales, and the fact that peace has brought a sense of relief to the people. They were determined to join in the spirit of the times and take a well earned holiday at the greatest annual Fair held in the world.

Among the exhibits were several of particular interest to pulp and paper jobbers, manufacturers and dealers. The splendid display jointly made by the Canadian Forestry Association and the Forest Products Laboratories of Montreal, in the Railway Building, and the representative showing of forest products, pulp and paper in the Government Building by the Forestry Branch of the Department of Lands of British Columbia elicited great interest.

In the Manufacturers Building the booths of the Interlake Tissue Mills, Merritton, W. J. Gage & Co, Toronto, and Kinleith Paper Mills, St. Catharines, attracted most favorable comment and were much appreciated features. The central idea of the display made by W. J. Gage & Co., and the Kinleith Paper Co. was their Holland Linen. Surmounting the frame work of the exhibit was an old Dutch windmill, which served to attract notice to the varied lines of correspondence paper, papeteries, visiting and calling-cards, etc., seen in the neatly arranged display cases. While the Kinleith Paper Mills turn out a number of high grade writing papers the one that the firm has always specialized in, is Holland Linen, which possesses such a beautiful texture and smoothness, that make its use delightful for correspondence purposes. It comes in a variety of shades with envelopes of various patterns to match and was displayed in bulk, in boxes and various other forms. The whole exhibit was arranged by Mr. P. R. Bradbury, who was in charge of the art department of W. J. Gage & Co., Toronto.

The Interlake Tissue Mills occupied their usual stand and the exhibit of their various lines was artistically and becomingly arranged. The walls were done in violet decorative crepe tissue, surmounted by a border of deep purple, while the alcove at the rear of the booth was similarly adorned. The ceiling was in white with a lattice design made of purple decorative crepe rope paper. The floral effects upon the border were inviting consisting of pink roses and green leaves all created of decorative crepe tissue. The company gave away many patriotic flag fans and fifty thousand sample packages of Interlake crepe tissue table napkins, the use of which is growing more widely all the while. They save labor and laundry bills and are perfectly sanitary, being made from pure bleached sulphite fibre. The company also displayed most fetchingly various other ranges turned out by them consisting of table covers, towels, special luncheon and outing sets, crepe paper bandages for surgical dressings, M. G. tissues in white and colors, in plain and crepe effect, and all leading brands of toilet paper, as well as light weight papers and paper specialities of every kind for which the company is widely known. The exhibit was in charge of John T. Berhalter and Wm. Innes.

The elaborate exhibit of the B. C. Forest Branch, which was under the direction of Major James

Brechin of Toronto, lumber commissioner for the east, and Wm. Robertson of Victoria, who has charge of the extension work, included all the widely known wood products of the Coast and Mountain regions. Several rolls of newsprint and kraft paper made by the mills of the province, as well as samples of kraft pulp were shown. Special attention was directed to the facilities which British Columbia affords in the way of wooded wealth, water powers, etc., for the future development and extension of the pulp and paper industry which, during the past three or four years, has made rapid strides in the West.

The Canadian Forestry Association and the Forest Products Laboratory of Montreal cooperated this year in making, under the auspices of the Canadian National Railways, a highly creditable and representative showing in the Railway Building. The whole exhibit was a striking one of the resources of Canada so far as her timber wealth is concerned and emphasized the necessity of conserving this great heritage so that it may be developed in the interests of the people of the Dominion as a whole. Co-existing with this splendid asset is the great pulp and paper industry of Canada, which is now forcing its way to the front and rapidly making of the Dominion the greatest newsprint company on earth. At one end of the booth was an immense roll of newsprint paper and on it were printed the words "The six Toronto daily newspapers require 1000 spruce and balsam trees for each day's run." Then there were rolls of paper of various sizes on which rested short spruce logs, all indicating the rapid growth of the newsprint industry. The small roll, dated 1914, had the following figures: "Total number tons newsprint produced in 1914, 232,570, value, \$11,386,845; on the 1919 roll were 800,000 tons newsprint—value \$60,000,000." Nothing could be more expressive of the rapid expansion of this great industry than the statistics covering a period of five years. The booth was adorned with several small spruce trees and one plant of interest was the Egyptian papyrus on which the world once depended for its paper manufacture. Cards conveyed in tense terms, timely information to passers-by and one of them stated that the export trade of Canadian newsprint paper last year was worth more money than all the other manufacturing exports in Canada in pre-war times. It was also asserted that Canadian spruce is rapidly becoming the chief reliance for 40,000,000 copies of newspapers issued daily in the United States and Canada.

In three sections there were shown, by the Forest Products Laboratory of Montreal, the raw materials used in the conversion of wood to pulp by the sulphite, mechanical and sulphate processes, together with an interesting description of each process. The descriptive nature of the manufacture of pulp from the log to the finished bale aroused much interest. In the sulphite section there were shown the spruce log, barked log, chips, sulphur, limestone, cooking liquor, etc. The finished products were washed pulp, screened pulp, pulp in sheets and in bales, bleached and unbleached. In the groundwood pulp demonstration there were the log, the barked log, the pulp as it came from the grinders, the screened pulp and the screenings, while in the sulphate division there



The joint display of the Forest Products Laboratories, Montreal, and the Canadian Forestry Association, at the Canadian National Exhibition, Toronto. The large booth was in the Railway Building and members of the Canadian Pulp and Paper Association contributed samples of paper pulp of various kinds.

was the barked log, chips, salt cake, fused salts, green and white liquor, lime and black ash, and black liquor, as well as the pulp in sheets and bales. Sections of various trees—spruce, balsam, fir, hemlock, jack pine and poplar were observed revealing the relative amount of wood used for pulp in the various processes, spruce being by far the largest portion. Several wood discs bore the motto "Can you guess the age of these logs?" and the years ran from 39 to 140.

Next there were panels or small boards cut from the various trees of Canada and bearing the slogan "Learn to know the woods of Canada." Among the woods shown were white pine, cedar, tamarack, hemlock, poplar, basswood, chestnut, cypress, quarter-cut white oak, plain red oak, quarter-cut red oak, plain white oak, maple, rock elm, walnut, birch, butternut, brown ash, Douglas fir, western pine, spruce, B. C. cedar, Sitka spruce, etc. The story was told of how British Columbia played such an important part in the manufacture of aeroplanes during the war, that province shipping in 1916 and 1917 sufficient wood for 30,000 aeroplanes. There were shown propeller blades and other portions of aerial craft made out of Sitka spruce.

Coming down to the hardwood department three blocks were exhibited—beech, birch and maple. One of the statements was that 1,000,000 tons of these hardwoods are taken from the Canadian forests annually to supply the wood carbonizing and wood distilling industries of the country. Visitors to the Fair were asked to note how many everyday needs are met by these distillates. Among them were alcohol, charcoal, acetate of lime, acetone, acetone oils, pure acetic acid, etc.

The Canadian forestry exhibit was under the direction of Mr. Robson Black of Ottawa, the energetic secretary of the Association, while the display made by the Forest Products Laboratories of Canada was supervised by Wm. B. Stokes, who has charge of the exhibit work of that widely known institution. Various pulp and paper mills lent their assistance toward making the display interesting and instructive and among these were Dommacona Paper Company, Laurentide Company, Riordon Pulp & Paper Company, Brompton Pulp & Paper Company, Dryden Timber and Power Company, Wayagamack Pulp & Paper Company, Howard Smith Paper Mills, and others. Several large photographs depicting the



interior of pulp mills and setting forth the various departments of the industry were kindly loaned for the occasion.

Interesting displays of newsprint and pulp were made in the Government building at the Canadian National Exhibition, Toronto, by the Spanish River Pulp and Paper Mills and the Abitibi Power and Paper Co. The Spanish River exhibit was arranged by Mr. Burke and that of the Abitibi Co. by Mr. Wilkes.

On top of a stand rested rolls of newsprint, small spruce logs and samples of pulp in the Spanish River booth while in front were pictures of the various processes of converting the raw material into the finished product. Many ingredients used in making pulp, all suitably and plainly labeled, were presented. The arrangement was educative and many leaflets were distributed setting forth the facilities of the various plants of the company. The daily newsprint capacity is 460 tons which will be increased by 100 tons when the two new Pusey and Jones machines, which are now under process of erection at Espanola are in operation. The output of ground wood at Espanola, Sturgeon Falls and Sault Ste. Marie is 400 tons daily, sulphite 220 and board 35 tons. In woods operations, the company employs 5,000 men; at Sault Ste. Marie 800, Espanola 500 and Sturgeon Falls 450, making a grand total of 6,750. The daily consumption of raw materials is as follows:—wood, 750 tons; coal 450 tons; sulphur 27 tons; limestone 30 tons; lime 6 tons; clay 10 tons; alum 4 tons and rosin size 2 tons. The company has three paper making machines at the Soo, six at Espanola including the two new ones, and two at Sturgeon Falls. At the Soo there are 24 grinders water driven, and 6 electric driven; at Espanola, 29 water driven grinders and at Sturgeon Falls, 21 also water driven. The sulphite plant at the Soo has four digesters, 17 x 54 feet and at Sturgeon Falls, two digesters, 16 x 54 feet. The same exhibit which was made in Toronto, is being shown this week at the Ottawa Exhibition.

In connection with the space of the Abitibi Co., two large rolls of news stood on end and resting on top of these was another roll from the widest machine in the plant, with the announcement that "seven and a half miles of this paper is made in twenty-four hours six days a week by one machine. The arrangement of the rolls imparted to the booth a fire-place effect. Each roll bore the trade mark device of the International Brotherhood of Paper Makers. There were also shown spruce boughs, discs of spruce logs, chips, etc., as well as jars containing the various solutions used in the manufacture of sulphite pulp. Samples of both ground wood and sulphite were in evidence. The entire exhibit was well arranged and afforded much interest to consumers of paper, newspaper publishers and the general public.

#### "I WONDER WHY."

Max Hinkey, of the staff of the Forest Product Laboratories, Montreal, has compiled under this title a collection of 42 short stories as told by Rev. George Adam, of Montreal, to the young people of Emmanuel Church. The stories selected comprise such matters as hold the attention of all young people and elders too, for the marvellous scientific and war inventions of the past few years are made use of in a new and novel way to point a lesson to the young folk.

The angels sang "Peace on Earth," not "Pieces."

#### BRITISH PREFERENCE APPARENTLY NON-EFFECTIVE.

In answer to a cable inquiry a message was received by the Canadian Pulp and Paper Association on Thursday from A. L. Dawe, who is representing them in London, that the British market had been opened to pulp and paper from other countries, and the preference hitherto enjoyed by Canadian mills had been withdrawn. This makes clear what was only surmised in an earlier general press despatch. The advantage would now be enjoyed by Scandinavian and German and other mills. The Canadian imports had been allowed in without any restrictions, while the others had to secure a license, and other regulations hampered competition.

#### SPRUCE BUD WORM ACTIVE IN N. B.

Fredericton, N. B., Sept. 8.—Half of the balsam fir in New Brunswick has been destroyed by the spruce bud worm this year, according to a report brought to the city by Prof. S. A. Graham, of the University of Minnesota, and Prof. J. D. Tothill, of the Dominion Entomological Bureau, who have returned after taking a trip of 125 miles through the crown timber lands of the province in company with L. S. Webb, of the Forests S. V. C.

They entered the woods about a week ago at Red Bank, near Newcastle, and then went to the head waters of the little southwest Miramichi. They came south across the Renous, and out of the woods at Boietown. The trip was made on foot and practically all the balsam fir which has been very plentiful in that district, has been destroyed. In some areas the pest attacked the spruce; and on the Renous the damage to spruce has been quite serious.

#### ANDREW CARNEGIE WAS SUPPORTER OF METRIC UNITS.

The passing of Andrew Carnegie brings to mind the fact that he had been for years an ardent advocate of world standardization in weights and measures through the adoption of metric units.

Andrew Carnegie was a member of the Metric Committee of the National American Association of Manufacturers, which strongly urged metric standardization. At the time the committee met, he made the following statement:

"The metric system of weights and measures is one of the steps forward that the Anglo-Saxon race is bound to take sooner or later. Our present weights and measures, inherited from Britain, are unworthy an intelligent nation to-day. The advantage America possesses over Britain in the decimal dollar system as compared with their pounds, shillings, and pence, would be fully equalled by the adoption of a metric system of weights and measures."

Carnegie believed that world standardization of weights and measures would aid greatly not only the cause of world trade, but also that of world peace. On another occasion he said: "The old weights and measures are a discredit to us. We shall inevitably adopt meter-liter-gram, if for no other reason than as an aid to peace; but they would enormously aid our world trade."

#### ORIGIN OF "CANADA"

"Kanata," meaning a collection of huts, was the Indian name. It was adopted by the French in its present form.—Exchange.

## Successful Safety First Campaign

(Special Contribution.)

An experiment in Accident Prevention carried out in the three mills of the Spanish River Pulp and Paper Mills, Ltd., which should be of intense interest to the management of all the pulp and paper mills of Canada, has just been brought to a successful conclusion.

The conviction that something special should be done to check the ever increasing toll of accidents gave rise to the suggestion that a definite period should be fixed during which, with the co-operation of all employees, a concentrated effort should be made to create a record.

The first move was made early in July when, with the assistance of the Ontario Pulp & Paper Makers' Safety Association, meetings were held at Sault Ste. Marie, Espanola and Sturgeon Falls. At these meetings moving picture films dealing with the causes and results of accidents were shown, and judging from the fact that overflow meetings were necessary at each place, the pictures were greatly appreciated by the audiences.

To drive home the lessons of the pictures and to rouse a feeling of individual responsibility among the employees, short fitting addresses were given by Mr. A. P. Costigane of the Safety Association. These talks were pointedly addressed to the individual employee and showed that in some mills where Safety Committees had been operating, the tendency was for the other employees to shoulder their responsibility on to the Committees and leave it to the Committees to prevent accidents. The speaker dwelt on the fallacy of this conception and emphasized that no matter what safeguards were installed by the Company, or how sincere the personnel of the Safety Committees might be in the discharge of their duties, no permanent progress could be accomplished unless all employees as individuals were willing to share the responsibility of preventing accidents. An appeal was made to the employees for their help, and it was then announced that a month later, a week to be called "No Accident Week" would be fixed, during which every effort would be made to create a record of no accidents in each of the mills.

The week selected was from August 4th to 9th, the same date being set for all three mills in order to create a friendly rivalry among them.

During the few weeks to elapse before the opening day of the fateful week arrived various means were taken to secure publicity throughout the mills. The date was announced in every issue of The Spanish River News, and interesting articles were written bearing on the subject and putting it up to everyone connected with the Company to see that the Mill with which they were connected passed through the week without an accident of any kind. Inside the mills signs were placed in every department urging the men to be particularly careful for that week. Red colored triangles were given the employees to wear on their overalls as reminders of the "No Accident Week." Large cards were placed in each department, with space left for the names of those who suffered accidents, a facsimile of this card was inserted in the "News" two weeks before campaign week with a statement to the effect that it would be reproduced with the names of any who suffered accidents, when the Campaign was over. There was also a large

sign printed on cotton placed above the entrance gate with a reference to Safety Week and a request that the men help put it through without any accident. Lastly, and of great importance, the members of the Safety Committee canvassed as many men as possible, talked to them and impressed on them the importance of the campaign.

At the close of the week two of the mills, Espanola and Sturgeon Falls, had a clean record, not having had an accident of any kind. The Sault Ste. Marie Mill had one accident, which marred an otherwise perfect record. This accident occurred in the Board Mill. One of the employees was playing ball and reached his hand into the winders to recover the ball which had lodged there. He had his fingers rather badly crushed and lost ten days as the result.

That such an accident, caused by pure carelessness, should happen was very regrettable, but much more to be deplored was the callous indifference of this youth towards the success of the campaign in which his fellow employees showed so much interest. The remarkable success of the experiment in the mills referred to show what can be accomplished in preventing accidents when all pull together. The average accidents in these mills for the 6 months previous to the campaign, works out at about 7 per week.

If intensive efforts such as described above, were made in all the mills in Canada, the accident records would soon show a vast improvement. Lost time would decrease in proportion, a large sum of money would be saved to employees and Compensation payments would shrink within reasonable proportions.

It is well worth the while of all mills to study this problem, and more closely emulate the example set out above by making a real attempt to reduce accidents.

Great credit is due the management and the employees of the Spanish River Mills for the humane and earnest effort that is being made to establish a name in the industry for immunity from accidents. More power to them.

### NEWSPRINT PRICES PROBED AGAIN.

A hearing has been arranged by R. A. Pringle K. C., Paper Controller, for Ottawa, on September 17, to take up the question of readjustment of the earlier prices for newsprint, that is, those prices preceding the \$66 rate fixed for the five months ending December 1, 1918. The first price fixed was \$50 for 11 months, and the next \$57 for the next 5 months. The paper mills contend that these earlier prices are too low. The price of \$66 sets up a standard for the special period of 5 months, and ignores the question of an average rate which was the basis of estimation used by the controller.

### EMPLOYMENT SITUATION IMPROVES.

Ottawa.—Weekly reports from employers to Dominion Headquarters of the Employment Service of Canada, Department of Labor, indicate that, apart from unemployment due to strikes, there was a further considerable increase in the volume of employment during the week ending August 16th, greater than for any week since July 14th. It should be noted that the increase in employment has been practically constant since the middle of April, only three slight weekly decreases having been registered, and that the present increase is an addition to the accumulated increases since that time.

# PULP AND PAPER NEWS



The Interlake Tissue Mills, of Merritt, Ont., report a brisk demand for their duplex carbon copy paper, which is put up in sealed packages containing one thousand sheets. The carbon copy paper is now turned out in bleached white, blue, pink, manila, green, canary, French grey, and golden rod so that each department of a business can use a distinctive color.

Col. C. H. L. Jones, Sault Ste. Marie, Ont., manager of operations of the Spanish River Pulp and Paper Mills, Limited, and John G. Sutherland, of Dayton, Ohio, sales manager, spent a few days in Toronto last week. The company are erecting thirty new houses as well as two large boarding houses at Espanola.

Wesley Tilton, superintendent of the Toronto Paper Mfg. Co., Cornwall, who spent a few days in Toronto and left on an extended visit to the paper mills in Michigan and other western states, has resumed his duties at Cornwall.

At the Canadian National Exhibition, Toronto, a display of much interest was that of the Martin Sales Agency, 32 Front Street West, Toronto, who showed their National Package Sealer in two different models and also their National Package Tape which takes the place of string in doing up parcels and packages. The Martin Sales Agency tied up a great many parcels for exhibitors and callers at the fair, making no charge for the service.

William Gorman of Montreal, eastern representative of the Provincial Paper Mills Co., Toronto, spent a few days in Toronto last week calling upon the trade and taking in the big fair.

Work is now in progress on an addition to the finishing room of the Interlake Tissue Mills, at Merritt, Ont. The building is being raised another story and in dimensions is 100 x 72 feet. W. J. Tremble has the contract, and it is expected that the job will be completed in three or four weeks. The structural material is reinforced concrete and brick.

Col. Thomas Gibson, D.S.O., C.M.G., Deputy Overseas Minister of Militia for Canada, is now on his way home from London, England, and will reach Toronto next week. He is secretary of the Spanish River Pulp Paper Mills, Ltd., and has been overseas about four years. Col. Gibson, whose home town is Ingersoll, Ont., went across the ocean as second in command of the 168th Oxford Rifles and spent a year in France where he was gassed. Returning to England he was later made Deputy Overseas Minister of Militia. Many friends in the paper trade will be pleased to welcome him back to Canada.

T. J. Allen, of Paper Sales, Limited, Toronto, is spending his holidays on a fishing expedition to Burleigh Falls, Ont.

As announced in last week's issue, the Brockville Paper Manufacturing Company, Limited, has obtained a charter, with an authorized capital of \$250,000. The plant will be erected in Brockville on Park street on

the Wood brickyard property. A bylaw to grant this land to the company for the purpose of erecting the mill, will be voted upon by the ratepayers of Brockville on Monday, September 15. It is understood that Ottawa, Thorold, Mille Roches and Kalamazoo capital is behind the enterprise. The company will be granted not only a free site but a fixed assessment of \$10,000 for a period of ten years and, in the event of the bylaw being carried, which is confidently expected, construction will start in the near future. The organization will employ one hundred and fifty hands and the plans for the new mill are now being prepared.

Elijah Moore, one of the oldest and most respected residents of Thorold, passed away recently in his 76th year. He was engaged for a quarter of a century in the contracting business and was afterwards in charge of the millwright department of the Riordon Pulp mill at Merritt and also represented this company during the erection of their plant at Hawkesbury. He was then invited to assume operating charge but not caring to remove from his native town of Thorold, he returned there and was in charge of the millwright department of the Montrose Division of the Provincial Paper Mills Co. He is survived by four children.

The Federal Government has handed over to the lumbering interests all the river works, booms and slides which are in operation on various rivers. This is a new policy and means that instead of the government continuing to pay for the upkeep the lumbermen will bear the expense of maintenance. It is stated that it would have been necessary for the federal government to expend \$100,000 in repairs to looms and slides during the coming year and that only the lumber interests would have been directly benefited.

In the House of Commons during the past week, Frank S. Cahill, M.P. for Pontiac, wanted to know if it was not possible to get Canadian cars to ship lumber and pulp wood from his county to the United States. A promise was made that the Hon. Dr. Reid, Minister of Railways and Canals, would take the matter up and investigate. Mr. Cahill stated that the reason given by the Department of Railways for the present shortage was that there are so many Canadian cars already across the line that they are scarce on this side. It has been said that it is not an easy matter to get Canadian cars returned from the United States and that some of them stay in the Republic as long as a year.

W. H. Miller & Sons, Tomifobia, Que., who recently formed a partnership to engage in the lumber and pulpwood business, report that not as much wood is being peeled in their district as last year and that the price F.O.B. cars, is \$14 for spruce. The firm expect to handle 5,000 cords of spruce this season and 1,000 cords of poplar—all peeled.

The Abitibi Power and Paper Co. are erecting fifty new houses at Iroquois Falls, Ont., and the frame work for more than half of them is now completed. Forty-seven cars arrived recently at Iroquois Falls laden with parts of the four new Wabunley paper machines

work will be installed next spring. The parts of the Drydowners which have arrived so far consist of large dryer rolls, only one of which can be placed on each flat car.

Mr. A. L. Dawe, secretary of the Canadian Pulp and Paper Association, is expected home from London about Oct. 1st. He went over the last day of June and has been representing the Canadian industry in England. During his absence, Mr. E. Beck has been very efficiently looking after the Association's office.

The Western Pulp and Lumber Co., Limited, has recently been incorporated, with headquarters in Vancouver.

L. P. Burns, Limited announce the incorporation of a company under this name, which was formerly Burns & Roberts, Limited, of Toronto. The new company is still at the same address, 301 Bank of Hamilton Building, Toronto. They are manufacturers of tanks, boilers, smoke stacks, plate work, and specialize in new and used machinery of all kinds.

Mr. Spielman, of Spielman Agencies, 45 Alexander St., Montreal, Canadian representatives of Griffiths Bros. & Co., Limited, London, Eng., manufacturers of all classes of paints, has just returned from a visit to England.

The Prince of Wales visited the Spanish River Pulp and Paper Mills at Sault Ste. Marie, last week. His Royal Highness showed great interest in this important industry. An illustrated description of the visit will be published next week.

#### CANADIAN PAPER TRADE NEXT WEEK.

The annual meeting of the Canadian Paper Trade Association will be held in the Ritz-Carlton Hotel, Montreal, on Tuesday and Wednesday, September 16 and 17. Assurances have been received by secretary N. J. Martin, of Toronto, of a large attendance from the western provinces and also from New Brunswick and Nova Scotia.

Word from W. C. Ridgway of New York City, secretary of the National Paper Trade Association, states that he will not be able to be present. It is expected, however, that some prominent member of the association will come in his stead and deliver an address. The members of the trade in Montreal will entertain the visitors to a luncheon at one o'clock on Wednesday, September 17. The morning sessions each day will begin at 9:30 and the afternoon at 2:15 o'clock.

During the past year the Canadian Paper Trade Association has more than fulfilled its mission in having fostered a good feeling between all members of the industry and in having established fixed trade customs, which have been of benefit alike to the manufacturer, the jobber and the user of paper. It is believed that the forthcoming annual meeting will still further enhance the spirit of co-operation and fellowship.

Members of the different sections of the Canadian Pulp and Paper Association will, it is hoped, also be present at the session next week. The membership of the C. P. T. A. is made up of dealers in both fine papers and wrappings and a number of leading executives will present papers of vital interest, which should be subjects for mutual discussion and consideration. Officers for the coming year will be elected and annual reports be read.

#### GEORGE SHERMAN BLOWN UP.

George Sherman, President of Taggart's Paper Co., Watertown, N.Y., had an accident August 25th that might easily have had fatal results. He was returning to port in his 10 ft. gasoline yacht, Wana II, during a very severe storm, when the engine exploded, blowing Mr. Sherman into the water. The other three men, employees of Mr. Sherman, were blown to other parts of the boat and suffered burns. They were able to get into the skiff which was being towed astern. Mr. Sherman, who made an improvised life raft of a table-top, had managed to remove his clothing and headed for land, a mile away. The height of the waves prevented his being seen at first by the men in the boat. Another motor-boat fortunately saw the accident and came to the rescue.

The yacht, which cost \$6,000, was burned to the water's edge, but the remains were taken to port. No explanation of the explosion has been given, but it is thought possible that lightning may have been responsible.

Mr. and Mrs. Sherman are now motoring in the White Mountains.

#### SIX MONTHS ACCIDENT REPORT AT LAUREN-TIDE.

A perusal of the following statement of Mill Accidents for the period January 1st to June 30th 1919 inclusive, as compared with the corresponding period of 1918, shows an equitable decrease of approximately 20% and further reflects considerable credit when taken into consideration that up to that time the 1918 figures were the best recorded.

	1919	1918	Decrease
Fatal accidents . . . . .	32	51	22%
Non fatal accidents . . . . .	455	671	16%
Working days lost . . . . .	\$1,462.41	\$2,059.47	16%
Wages lost . . . . .	486.98	706.04	18%
Compensation paid . . . . .			

Two of the 1919 accidents were of a serious nature, those happening to E. Bourassa of the Paper Repair Department who had the great misfortune to have his spine fractured on April 7th, and L. Langlois of the New Construction (General Mills) who got his leg badly contused on May 6th. Both of those men are still incapacitated although making good progress towards recovery; these two accidents alone account for 119 days or 46% of the total lost time under review, and are of greater intensity than any sustained in 1918, so that apart from these the record makes even more remarkably good reading.

That greater care and attention is being paid to small cuts, bruises, etc., is manifest from the fact that the number of first aid dressings have jumped from 856 in 1918 to 1,036 in 1919, a 10% increase and of far reaching effect in the minimising of industrial lost time through infected wounds from inattention or gross neglect.

The Pulp and Paper Magazine commends this record, both because of the Company's care in keeping it and encouraging careful habits and because of the attitude of the men in regard to taking care of themselves. It will be a happy day when everyone thinks of safety first—his own and other fellow's.

A disorderly workshop contributes to the number of accidents. Do not leave waste material or refuse lying around. Safe places are provided for storing in; help keep the premises clean.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, September, 8.—The developments in the paper trade during the past week which are of interest, are the announcements that free trade now exists on all paper entering the Mother country and that Controller Pringle is to resume his inquiry at Ottawa and the publishers have been invited to be present as well as the manufacturers. It is hoped by the producers that paper control and regulation in Canada is nearing an end and that prices will soon be fixed for the different periods covered by the controller's orders. How long is the farce comely going to continue, is the question being asked on all sides. Surely it will soon terminate in view of the growing shortage of newsprint and the fact that demand is increasing all the while. It is understood that some mills in Canada have received as high as five cents for spot delivery of newsprint across the line. One leading concern turned down an order during the past week for several carloads at \$4.65, yet mills supplying Canadian consumers are allowed to charge only \$3.45.

It is announced that A. L. Dawe, secretary of the Canadian Pulp and Paper Association, who has been spending some time in England looking into export matters, will soon return to Canada. It is stated that arrangement have been made for marketing in the Old Country all this year's available surplus of newsprint, board, kraft and book papers from Canada. These lines are now well established on the British market but whether the Dominion will be able to extend them is the question. The removal of the import restrictions in Great Britain may admit Scandinavian and even German pulp and paper products which, because of low exchange and favorable shipping and carriage rates can be disposed of at prices which Canadian producers owing to distance and other barriers may not be able to meet. Australia, Japan and China are clamoring for newsprint and the foreign situation is rather uncertain at the present time.

The pulp market continues active and prices are strengthening all the while. There is certain to be a revision upwards in some paper lines before many months pass and just how high figures will go no one

cares to estimate. Experts, who have always been able to read the future with a fair amount of certainty are at a loss to foretell events. The Canadian Export Paper Company have just issued a very handsome and nicely illustrated book setting forth the paper resources, activities and production of the leading paper makers serving the buyer through one central organization. Several mills have been invited by the Canadian Export Paper Co. to send in ranges of samples, prices, widths of machines, tonnage to export, etc., in order that these facts may be dispatched to Agencies abroad. Probably the whole export and domestic outlook will be reviewed at the annual meeting of the Canadian Paper Trade Association in Montreal on September 15 and 16 when, it is expected, the Canadian Pulp and Paper Association will be assembling at the same time to consider important matters.

Buying for fall has now started in and all mills are very active. Manufacturing stationers in some cities are working overtime to catch up with orders and customers, who placed large orders for holiday trade, are in a number of cases increasing the original quantities. A leading manufacturing stationer stated this week "Every year we have been increasing our lines of fancy stationery, papeteries, etc., and have always run short before the season is out. Gifts in this line appear to be expanding annually. I presume this was due, during the period of the war, to the suggestions made in the press that useful and sensible donations to friends and relatives should be made."

Paper box plants are well employed and specialty mills have about all the business they can take care of while board plants are particularly active. The whole situation is strong and business never loomed up better for fall. In spite of the high prices prevailing most users of paper are purchasing the better grades and turning out better printed catalogs, price lists, booklets, folders, etc., than they have for years. Jobbers declare that the volume of business done during August has been a record one and way ahead of last year when there was the usual mid-summer quietness in trade circles. This season there has been none. A good omen of the way things are going is evidenced

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in the additions being made to coated paper plants which report that, in spite of the increase of a quarter of a cent and all quotations, f.o.b. mill, there has been no let-up in the volume. Customers apparently are going on the supposition that they had better send in as large orders as possible in the event of another rise taking place. This feeling is indicative of what existing all along the line. Activity in the rag and waste paper stock arena continues with shortage of supplies on many lines and mills buying freely for fall. An amended price list has been sent out on hard finished cotton twines and the market shows a rising tendency. Dealers have been advised, therefore, to take advantage of the present quotations. In sending out word to the trade, one firm stated that in some cases, prices are higher than previously quoted, and add "We calculate, however, that the laid down prices at to-day's rate of exchange are lower than those previously sent out. In estimating previously we did not take into account the fact that the five per cent extra duty imposed during the war had now been removed. Eliminating this and bearing in mind that British currency is now at a discount of at least ten per cent we think that the laid down costs in Canada are a little lower."

Toilet and tissue plants are rushed and have stopped taking orders for export owing to the crush of local business. One manufacturer said this week that there was no use in camouflaging the foreign buyer as he could not possibly take aboard any more business and regretted that the facilities of his plant were limited. He thought it would be a good thing in the interest of the balance of trade and foreign exchange if all paper mills in Canada were able to export about twenty-five per cent. of their entire product.

### NEW YORK MARKETS.

New York, September 6.—Business in all kinds of paper is booming along at a lively pace, and extreme firmness characterizes prices in every end of the market. Consumers are anxiously seeking supplies and are so bent on covering their requirements for the next several months that they are frequently overlooking questions of price so long as they receive assurances in regard to deliveries. Mills in various sections of the States are running at top speed in an effort to take care of all the wants of customers, and it can be said that demand is assuming proportions where manufacturers simply are unable to cope with it. Numerous mills have contracted for their output for an appreciable period ahead and are decidedly reluctant to enter into additional engagements at this time, in consequence of which buyers are daily encountering increased difficulty in placing orders. Deliveries are far behind, so much so that it is stated by authoritative members of the trade that should demand suddenly cease entirely mills could be kept operating at maximum capacity for a month or more in filling the bookings they now have in hand.

While plans are being perfected for the inquiry into the newsprint industry by a committee recently appointed for the purpose by the United States Senate, the rapidly expanding demand for this kind of paper and the inability of producers to satisfy all the wants of publishers is sending prices sky-rocketing. Spot news in rolls have been sold this week at 5.50 per pound, and there have been few offerings at this high price. Mills are shipping the great

bulk of their output to contract customers and to other regular buyers almost as soon as it becomes available, with the result that customers seeking additional supplies in the open market are experiencing considerable trouble in realizing their wants. Whether the forthcoming inquiry will have a depressing effect on prices is a matter of conjecture at present. At the moment the market for newsprint is in more or less of an independent position with the law of supply and demand running its full course, and with the potential requirements of publishers in excess of the available supply it is logical that values are advancing.

Book papers are also in an exceedingly strong market position. Demand is active and voluminous, and manufacturers are hard put to it in making their supplies go around to the satisfaction of all their customers. When it is understood that the average periodical in this country is at present carrying a larger volume of advertising than ever before, the heavy consumption of book paper is readily explained. One only has to watch this or that magazine each week or month to see it grow in size, almost every issue finding it increased by a few pages. Super-calendered book paper is selling freely at 9 to 9.50 cents per pound, while machine finished book is firmly at 8.50 cents and up to 9 cents.

The fine paper market is gradually assuming broader proportions and prices are undergoing a stiffening process. Manufacturers of bond, linen and ledger papers, finding the cost of production on the rise and demand more than they can supply, are repeatedly advancing quotations, and buyers are meeting the higher prices without haggling over them. Tissue papers are moving in good volume and at strong quotations. No. 1 white tissue is finding a ready market at about \$1.25, white No. 2 white and No. 1 manila are selling at \$1.10 to \$1.15. Wrappings are sought in increasing quantities and prices rule firm and on the uptrend. Kraft wrapping of No. 1 quality is freely fetching 8.50 to 9 cents per pound, and buyers are placing orders in such volume that mills are unable to cope with the business offered them.

While the strike of paper box workers in New York and vicinity has had a quieting influence on the board market, manufacturers report having all the business they can handle, and no let up in operations of mills can be noted. The probabilities are that the labor difficulties in the trade locally will soon be settled and that box makers will then flock into the market to buy board in preparation for the pre-holiday season, so that such buying as the strike has eliminated has merely been postponed for a time. Prices on all kinds of board are firm and tending upward. Chip is quoted at about \$60 per ton, news at \$65 and strawboard at \$65.

GROUND WOOD.—The market for ground wood has stiffened to a notable degree during the past few days and prices have jumped with remarkable rapidity. Where grinders a week or so ago were disposing of spot lots of spruce pulp at around \$30 per ton, to-day quotations range from \$34 to \$36 at the shipping point, and offerings at these, or for that matter at any prices, are decidedly restricted in number and volume. The heavy demand for newsprint paper and the resultant large consumption of ground wood have brought consumers into the market seeking all the pulp to be had for prompt and future delivery. Grinders, in most cases having their current production sold on contract and having practically no supply to direct to the open market, are finding it impossible

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to take care of the demands made upon them, so that the scramble for the small amounts of pulp available to outside buyers is running prices up at a rapid pace. If prevailing conditions of supply and demand continue for any length of time, there seems no predicting where values will soar to.

**CHEMICAL PULP.** In keeping with the activity in the paper market, business in chemical wood pulps is undergoing steady expansion and prices are gradually ascending to higher levels. Manufacturers practically without exception are sold far ahead and in some cases are entirely out of the market for the present as sellers, having no pulp to offer. Demand is keen and consumers are not endeavoring to hide the fact that they are urgently in need of fresh supplies. Another strong factor is that prices in the Scandinavian countries are rising and that buyers here are experiencing considerable trouble in affecting purchases there, owing to producers in Norway, Sweden and Finland neglecting the American market because of their obtaining better prices for their pulps elsewhere. Importers and dealers in New York report receiving numerous inquiries from foreign sources for pulp, which they are largely unable to fill, but which show that demand in other parts of the world is equally as brisk as it is in the United States. Newsprint sulphite is very firm and is moving actively at a price range of \$70 to \$75 per ton at the pulp mill, with most sellers asking and securing the higher figure. Bleached sulphite is in great demand and manufacturers of strictly No. 1 quality pulp of this description are freely obtaining 6 cents a pound at the mill. Soda pulp is actively sought and is higher in price, the contract basis having been advanced to 4.65 cents a pound while spot lots are reported selling at close to 5 cents. Kraft is strong and moving in steadily increasing quantity.

**RAGS.**—The rag market retains its firm undertone although demand has not shown perceptible expansion this week. On the whole, paper manufacturers are buying rag stock in restricted fashion. Nearly all consuming mills are placing orders off and on but the aggregate volume of the purchases is not out of the ordinary. The main reason for this apparently is that mills bought heavily several months ago and are now using up stocks secured at that time, while there is no question that the heavy arrivals of rags from Europe during the past month have acted to check buying of domestic material. Dealers, however, view the future with extreme confidence, and, anticipating a return of mills into the market very soon, are not pressing their wares on buyers. Very few "bargain" lots of rags are being offered, and consumers generally find it necessary to pay stiff prices to secure supplies. Sales noted during the current week include No. 1 repacked whites at 7.25 cents per pound at the point of shipment, repacked thirds and blues at 4.25 to 4.50 cents, new white shirt cuttings of No. 1 grade at 15.50 cents, new No. 1 washables at 9.50 cents, and No. 1 roofing rags at 2.90 to 3 cents.

**PAPER STOCK.** All grades of paper stock have moved freely this week and at firm prices. Box board mills have been active buyers of the low qualities of material, while book and other paper manufacturers have absorbed the bulk of supply offered. Sales of soft white shavings of No. 1 grade at 4.35 to 4.50 cents a pound for No. 2, and No. 1 hard white shavings at 5.50 cents. Kraft paper has risen in value, sales of No. 1

packing being recorded at 3.50 cents New York, while demand for books and magazines has ruled strong and mills have placed orders calling for large tonnages at a price basis of around 2.60 cents. Folded news has sold to board mills at 1.05 to 1.10 cents a pound New York, and No. 1 mixed paper at 85 to 90 cents per hundred pounds at the shipping point.

**BAGGING AND ROPE.**—Current demand for old Manila rope is active and offered supplies are being quickly absorbed by mills at prices ranging from 6.25 to 6.50 cents a pound f.o.b. New York. Dealers say incoming supplies from producing centres are light and there is accordingly much cautiousness practiced by sellers in booking orders. The market for old bagging continues comparatively quiet and sales are scattered and more often of small tonnage. No. 1 scrap bagging is selling at around 3 cents a pound, roofing bagging at 2.60 cents and scrap gunny at 3.50 to 3.75 cents.

### CHINESE CONSIDERED CANADIAN PAPER TOO GOOD.

Just at present the paper market in the United Kingdom is subject to some vicissitudes, but no time should be lost by United Kingdom firms in making known to the Chinese markets the fact that they will shortly be in a position to supply and in emphasizing the high quality of their production and their general suitability for Chinese requirements. Formerly the bulk of the supplies sent into Hong Kong came from Norway and Sweden, but it is expected that a good deal of this trade will be transferred to Canadian and British firms. The United Kingdom shipped fairly large quantities of stationery, bank and other office paper and newsprint for the use of the locally established European journals. Since the outbreak of war and the consequent inability of this country to send supplies, the Japanese paper manufacturers have done what they could do to supply the needs of local buyers, and large quantities of paper have been shipped from that country to South China. The Japanese competition is not believed to be likely to prove serious once normal conditions are resumed, as Japanese paper has proved to be comparatively poor quality, and Chinese buyers are not satisfied with it. Chinese stationery is a special kind of paper of an inferior grade, somewhat below that generally used in this country. There is also a large trade in another kind of paper specially made for the Far East and dyed a red color and used for a variety of decorative and other purposes. The demand for this was formerly filled from Scandinavian and German sources, but recently most of that imported into the country has been made in Japan.

There has recently been a considerable increase in the number and size of the local newspapers printed in the Chinese language and owing to the spread of education, this number is likely to increase considerably, which, of course, means an increase in the quantity of newsprint required by the country in the near future. Good quality newsprint so far is only needed and bought by the European papers; the native journals are content with a very inferior grade. Samples of Canadian newsprint were recently sent into China, but it was reported that the quality was much too good and that sales were consequently not likely to be made to any extent.—Financial Times.

He never ate less than four meals a day and never walked more than a mile in the same time. And yet he wondered.



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**A POETICAL PUFF FROM A SOOT BLOWER.**

Then.

The fireman stood high off the boiler room floor  
Wet to the skin, his hands were sore  
From burns on the hot steam lance that he bore,  
Trying to clean flues through the boiler door.  
His face was black from the soot that blew  
Back through the door—not out through the flue.  
As well behaved coal soot ought to do,  
What he said of his job was a plenty too!

Now.

The fireman stands on the boiler room floor.  
Opens a valve or two. Nothing more.  
Pulls a few chains. The steam jets roar.  
My, how quickly the job is o'er.  
Cleans the boiler—saves the heat,  
John thinks soot cleaners can't be beat,  
Likes his work,—smiles all day,  
He cleans his boilers the VILCAN way.

**ENGINEERING DATA**

Viele, Blackwell & Buck, exporters, importers, engineers and contractors, 49 Wall Street, New York, have sent out recently a series of bulletins describing a few of their varied interests. No. 1 shows rails and accessories, including industrial railways and equipment. No. 2-A gives data on structural steel, while No. 3-A shows all kinds and shapes of iron and steel bars. No. 4 shows a great variety of standard and special steel and iron pipe and fittings. No. 5 describes steel and iron plate and contains some interesting illustrations.

A. Klipstein & Co., New York, who are represented in Canada by A. M. Heustis, Toronto, have sent out a list of American and Swiss dyestuffs which they manufacture or handle. It is a long list and contains the names of many colors familiar to the paper maker. The appearance of many new names, however, leads us again to wonder why a standard nomenclature cannot be agreed upon, or, if a trade name must be used, why there is not some indication of what it is. The booklet states that the Swiss manufacturers weathered the storm of German price cutting and since 1914 have prevented a famine in synthetic indigo, which is made from American intermediates.

**WHEN EVERYTHING GOES DEAD WRONG.**

Things in this world go by contraries and the more one tries to achieve the farther off he sometimes gets while, at other periods, he can secure desired results without extra effort. It is said that the management of one large pulp plant in Canada recently urged their men to have a "no accident week," in the interest of safety. That very week more mishaps of a minor character occurred than there had for months before. One of the bosses humorously remarked, "Well, we will try it again and I hope with more gratifying results. The men's interpretation of our plan seemed to be that not one of them should miss the opportunity of getting hurt during our "no accident week."

It may have been that a curious trait of human nature urged each one who had a minor accident to report it so as to be sure nothing was overlooked. The publicity of the occasion doubtless emphasized things that at other times would be forgotten.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

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# EDITORIAL

## EMPIRE PREFERENCE A MYTH.

It seems that the Mother Country has forgotten her children; at least this is the first impression one gets on reading that the principle of Empire Preference has met defeat at the hands of the practice of Free Trade, which has been England's habit. This change of heart on the part of the present Government will probably mean much less to other British dominions than it will to Canada, and less to most business interests here than to the pulp and paper industry. As we see it, Great Britain and her markets are now open to the free competition of the world, and the cargo of pulp in the Thames from Canada is on the same basis as one from Sweden, Germany or America—pulp and paper are the principal Canadian commodities affected. There is little, if any, European competition for food-stuffs to meet, nor for our metal. There is competition for the fish market and probably for timber, although in this regard the European struggle for some years is now likely to be for the material than for the market.

We have already remarked in these columns that as a family affair, the parts of the Empire would help themselves and each other by dealing as far as possible in the family, but that a permanent, stable business relation could not be built solely on the foundation of the sentiment of brothers-in-arms.

Trade is bound to work around to the channels which supply the best goods at the best price with a feeling of reliability and security on both sides. In private business there are some people with whom one may refuse to do business because of personal dislike or distrust and one may decide to do business with a friend for the opposite reasons, even if a little less profit is made on the deal. That is all right for individuals, but in ordinary times such action can hardly be legislated on a people. In spite of the dropping of the barrier, there are undoubtedly many English concerns who will refuse to buy German goods of any kind if they can be bought elsewhere. Many have made connections with Canadian producers and like the loyal and tenacious symbolic bulldog, they will hold on. It is the privilege, the opportunity, and the duty of such Canadian firms to stand by the Briton and expend every reasonable effort to furnish such goods at such prices as will assist the consumer to compete with the man who buys from the Hun.

The argument that Germany must sell her goods if she is to pay the penalties of the war is perfectly sound, but there is plenty of room for fair competition on an equal footing. The British Government, of course,

has some obligation to support and encourage, if not protect, British industries. In the paper field, British mills cannot supply the home demands for all grades, leaving a considerable marginal market for outsiders, and practically all pulp is imported. Some of the paper lines Canada is not equipped to supply and these are quite properly open to countries outside the Empire. In the matter of pulp it is the same way. The pulp mills of the Empire cannot supply the British demand. But we can supply a large part of it and could easily develop capacity to produce more. The same is true of some lines of paper that are in great demand in England. There is little use encouraging such developments in the face of almost certainly better prices on foreign goods.

The price of imported materials is the price c.i.f., and if the freight is \$10 or \$12 per ton in favor of the German or Scandinavian, a big handicap is at once laid on the Canadian and the most efficient management and abundant material and process may not be able to overcome it. One reason for the present discrepancy in freight rates seems to be that with so much space requisitioned at government rates, it seems up to the carrier to make as much as possible on the space left for general cargo. The fact that a number of our mills are making many shipments, in spite of such difficulties, is evidence that they are producing superior goods. It does seem, however, that if London finds it necessary to close one door they might at least open a window and let our shippers have space enough to get the stuff across.

In the meantime there is one safe course for our pulp and paper makers, and that is to go after the markets for which we have a superior geographical position or to which the freights are on a par with our competitors. But it is fully as important and necessary to make the goods that satisfy the requirements of the market, to have an able representative on the spot and on the job and *to give honest and efficient service*. Then we can kiss Preference good-bye.

## ENCOURAGING WORKMEN TO READ.

Through the efforts of the local representation of the Pulp and Paper Magazine and the hearty co-operation of the management, 35 new names have recently been added to the subscribers among the employees of the Pacific Mills Ltd., at Ocean Falls B. C. In order to encourage the men in the mills to take a wider interest in their work and in order to enable them to learn more about the extent, value, processes, etc.,

have. The manufacture of pulp and paper are subjects not studied by the mill men on the same lines as the members of the Technical Section regard to the one of a subscription to the magazine. In order to encourage their employees to become better acquainted with the industry so that they may not only become better workmen but also to find more enjoyment in their work, the management of the Pacific Mills had generously agreed to assume a portion of the cost of each subscription. Several eastern mills have taken similar action, also with gratifying results.

It is a great pleasure as well as a source of satisfaction that these workmen have been enrolled among the subscribers to the Magazine. From several years experience in overalls usually "borrowed" from the rag room the editor feels a peculiar fellowship with the men on the machines and extends a personal welcome to them.

The principal object of this magazine, as of all of the journals published by the Industrial and Educational Press, is to encourage and extend a knowledge of their business among the workers of the industry. There are many phases to an industry such as ours and it is important that a man in one branch should not only be particularly skilled and informed in his own line but that he should have an acquaintance with the manufacture of other lines so as to appreciate the various uses of pulp and paper and to understand the relationship of one branch of the industry to another. It is further to his advantage for the workmen to keep in touch with new developments in the design of machinery and the development of processes and it is also often valuable for him to know where certain materials and equipment can be procured. Part of this information will be acquired through the reading columns of the Pulp and Paper Magazine, another part through the advertising pages, and what isn't learned in this way can usually be learned by addressing a question to the magazine.

Questions regarding any phase of the industry are very welcome and the editor, as a member of the Committee on Education for the Technical Section, and through his acquaintance with the industry will be able, in the great majority of cases, to obtain the information desired. Nearly every problem that comes to any one person's experience has already happened to others so that a reader has at his disposal practically a combined knowledge of the entire industry. When questions are of general interest, and particularly those a variety of answers are desirable the questions will be printed in the magazine and answers or solutions will be published for. This will encourage those who are interested to assist some who are not so fortunate and will enable the collection of much information in a more available and valuable form. When a person sets down his thoughts by writing he necessarily thinks out care-

fully what he is saying and the process results in arranging his knowledge in his own mind in much more definite form than would otherwise be likely. The result need not be a model of English composition, because there are comparatively few, even among college graduates, who use the English language properly. It is possible, however, for anyone to express himself accurately, even though his language lack somewhat in elegance.

It is hoped that more and more of the new, as well as the old, subscribers will avail themselves of any service that can be rendered through the editorial office or the columns of the magazine.

#### FOUND HIM.

The address of Walter Clifford, which was asked for two weeks ago has been given by him. He is in Canton, N. C. The promptness of his reply is appreciated.

#### COBWEBS.

A happy suggestion in regard to foreign trade is made in Bulletin No. 30 by the Irving National Bank of New York. Regret is expressed that mistakes are so unduly advertised. To emphasize every instance of poor packing, incorrect billing, or other error is likely to have a discouraging effect on the shipper and to injure the confidence of the buyer. Business mistakes are sure to happen, and the thing to do in export, as is done in domestic trade is to correct and forget them, having learned a lesson meanwhile.

In spite of this good advice, however, it is desirable to mention the mistakes that some have made, so that others may avoid them.

Isn't it interesting to think of newspapers charging a Government with protecting the paper makers? Read the British Trade News on another page and see what conditions are in England. In spite of this defection of the Empire preference idea, there is a good chance in England for Canadian pulp and paper. But shipping accommodations are necessary.

In regard to shipping it was intimated that there has been cargo space to England for those who were on the alert for opportunities and prepared to pay the price. That may be, but who wants to pay more for freight than the profit on his goods?

"The Canadian Export Pioneer," which has as subtitle "Canada—Products Advertiser and Oversea Markets Review," is a new journal published in London and Toronto every month. The aim of the Pioneer will be to promote trade, particularly within the United Kingdom, and the Dominion. A number of export journals have been started recently, for the present seems a propitious time for such efforts. There is a big field in the Empire for such a journal just now.

# Care of Electrical Apparatus in Pulp and Paper Mills

By W. W. Cronkhite, General Electric Company.

This is a subject that is often neglected in pulp and paper mills, so perhaps a few hints may be helpful. The following suggestions cover the essential care to which an electric motor is entitled, to assure long life and continuous operation. This care is simply attention that should be regularly and systematically given. A few minutes each week will suffice. I call to mind visiting a paper mill where the superintendent was opposed to electric motors because, as he said, "They require babying." He was showing me his mill and we were in the engine room, where a 500 hp. steam engine was receiving its usual attention from the engineer and his helper. The helper was busily engaged in wiping up and polishing the engine and the engineer was also busy with his oil can. In other words, this engine was receiving the attention it was entitled to, and as the mill was running on three tours, it meant three engineers on the pay roll. We then moved on to the groundwood mill and there we found two 1,500 hp. motors driving grinders. This mill had installed in all nearly 150 motors of various sizes, representing thousands of dollars investment, and he was paying a man \$75.00 a month to look after this investment. Compare the attention the 500 hp. steam engine was getting with the attention given these 150 motors, totaling approximately ten times the hp. and you will get my point, not that the engine was getting too much attention but that the motors were getting too little.

The first recommendation in the care of electrical equipment is to secure the services of a good man who understands his business. When you have done this you have gone a long way toward protecting your investment and toward continuity of service which, after all, is the thing to be desired. Another important and vital point to be considered is the selection of the proper motor as to type and size. No amount of attention will offset improper application. If you want maximum production and minimum power cost, it is most necessary that proper motor application be secured.

As in any other method of drive, it is important that good alignment be maintained. In the case of belt drive the belt must not be so tight as to cause undue wear or heating on the bearings.

**Oiling.**—It is essential that bearings receive proper lubrication. After the motor has run a few days, draw off the oil, pour kerosene or gasoline through the bearings to wash out all sediment; then refill with fresh oil, being sure that no trace of kerosene or gasoline remains in the bearings. When replacing drainage plugs dip them in a mixture of red lead and shellac so as to prevent leakage. Keep the bearing cap closed tight, oil the bearings always through the oil fillers, and if you would maintain the correct oil level, never fill the bearings when the motor is running. Most bearing trouble comes from not keeping the bearing cap closed tight. One of the large electrical companies is now building its motors with the bearing cap screwed down tight so it cannot be lifted up by every passer-by. You know the old saying about screening the dirt out of pulp is "not to put it there in the first place." This is true of motor bearings, and the best way to keep dirt out of the bearings is to keep the bearing cap always closed. Often motor bearings get too much oil,

which overflows and runs down into the windings; this does not help the insulation any.

**Inspection.**—Where there is a large number of motors to deal with some mills paint a number on each motor and keep a card record. Every Sunday a certain number of motors are inspected, blown out with compressed air so as to free the windings of dust, pulp, etc., and a record is kept showing just what motors have been looked after. In this way every motor receives regularly a certain amount of attention. When using compressed air for this purpose it is recommended that about 30 pounds pressure be used.

**Care of Windings.**—To protect the windings they should be sprayed with a good air drying varnish. The interval between spraying should be governed by the conditions under which the motor is operating, probably once a year, unless conditions were very bad, and then perhaps every six months.

The varnish should be applied by a compressed air sprayer. The motor windings should be blown out and thoroughly cleaned, preferably with gasoline, before applying the varnish. The kind of varnish used depends on the conditions under which the motor works, whether moist, acid, alkaline or in general use.

Varnish applied from a compressed air sprayer at a pressure from 25 to 30 pounds gives excellent results. It is best to get this varnish from the electrical company who built the motor, letting them recommend the proper varnish.

## TYPES OF MOTORS.

We must consider the care of both alternating and direct current motors as both are used in the industry.

There are several types of alternating current motors—squirrel cage, slip ring and synchronous motors. They all have their proper places. Direct current motors are used principally in driving the paper machines and are generally not required anywhere else in the mill.

Squirrel cage motors have no commutator or slip rings and about the only attention this type of motor demands is to give the ends of the windings an occasional spraying and to look after the lubrication of the bearings. This does not mean that motor bearings are not durable, for there are any number of installations where motors are running with the original bearings, often ten and fifteen years service.

Slip ring motors, or motors with collector rings and brushes are used quite extensively in the paper and pulp industry and require a certain amount of attention.

See that the brushes move freely in the holders and that they make an even contact with the collector rings.

Brushes should be inspected frequently. We cannot change the laws of nature, so brushes like everything else will in time wear out, so it is well to keep a spare set. When a new brush is put in, it should be fitted carefully so that the brush will be shaped to make a firm and even contact with the commutator. There should always be a slight play in the "pigtailed" for, if they are too tight, they will tend to pull the brush out of line and also out of proper contact with the surface of the contactor.

Excessive sparking may be due to overload, brushes not in proper position, or vibration. There are other causes but the above are the most general. Dirty slip rings will cause erratic operation.

Synchronous motors require very little attention except ordinary cleanliness, proper oiling, and attention to brushes.

When a new machine, or an old machine which has been repaired is first started, see that the oil rings revolve freely and carry sufficient oil to the shaft. Thereafter the rings need practically no attention so long as a proper supply of oil is maintained in the oil wells.

Keep the oil covers closed.

**Brushes.**—The same remarks made about brushes on slip ring motors applies to direct current motors. This type is not very generally used in paper mills as about the only place they are necessary is in driving the paper machine. A new or newly turned commutator should be cleaned daily until the brushes reach a good fit. If sparking continues, the surface should be smoothed, either by using a piece of sandstone from which a segmental piece has been cut, having the same radius as the commutators, or by pressing a piece of very fine sandpaper against the commutator with a block of wood shaped properly. The sandstone or paper should be moved back and forth across the commutator parallel with the shaft while the motor is running full speed. Never use emery cloth. Clean brushes and commutator thoroughly after this operation.

Occasionally, through dirty or sticky brushes combined with possibly a high spot on the commutator, the armature circuit may be entirely opened or a soldered terminal may work loose. The remedy in this case is self-evident.

Sometimes in replacing brushes after cleaning, the finger springs used to keep brushes in tension against the commutator are not put back into their proper position. This will cause excessive sparking.

**Why Motors Stop.**—When a motor which has been running satisfactorily heats to excess, sparks badly, fails to carry its rated load or suddenly stops, or after having been intentionally stopped, refuses to start again, there is generally some simple explanation of the difficulty. If it is convenient, the motor should be disconnected from the driven machine, after which it is a simple matter to determine if the motor is at fault.

First try to turn over the motor or revolving element. If it does not turn freely, it may be that because of insufficient lubrication, the bearing linings have become worn that the rotor rubs against the stator or stationary part. An air gap will indicate incorrect clearances. In fact, a visual inspection often suffices to show whether rotor and stator have been in contact. The answer in this case is new bearing linings.

In case of a belted motor, the belt may have been too tight, resulting in undue heating of the linings, causing them to "freeze" or stick together.

If the motor cannot be entirely disconnected from its load, reduce the load as much as possible, see that there are no hot bearings or locked gears on the driven shaft, and then try to start the motor again. If it fails, look over the same items suggested above.

**Starting Boxes.**—Perhaps a word or two relative to compensators and their care would be of some help.

In order to reduce the current when starting squirrel cage motors, a starting compensator is employed. When starting the motor the switch should be thrown into the starting position and held there until the motor comes up to speed and then it should be pulled over into the running position. It does not reduce the starting current to start the motor by "jogging," but it does produce a number of successive rushes and causes the contact fingers to burn badly.

Compensators are shipped connected to the second tap thus giving the second lowest starting voltage and torque. If the motor will not start its load on this tap, the next higher voltage tap should be tried and so on until taps are found which will give the required starting torque. The lowest tap is always next to the core.

After the compensator is in position and connected, try all moving parts of the low-voltage release mechanism to see that they work freely. Inspect the switch to see that the contacts, etc., are in working condition. See that the oil-box is filled with oil, to within  $\frac{1}{4}$  inch of the shaft opening. Occasionally the low-voltage release will start humming. This is due to imperfect sealing surface or to the plunger not sealing. Lowering the holding catch one tooth will usually take care of this.

The levers connected with the low-voltage release should be cleaned and greased occasionally to insure the opening of the switch on voltage failure.

In case of burn-out on one coil of three phase compensator, the coil may be cut out by a slight change in connections and the compensator used temporarily until a new set of coils can be obtained. Care should be taken to keep all dirt from the coil.

Taken as a whole, electrical apparatus needs very little attention—just ordinary care such as cleanliness and proper lubrication, always assuming you have installed the proper type motor in the first place. In many mills the electrical equipment represents thousands of dollars, and such an investment should be better looked after, and by a man who understands his business. As a general thing, motors in paper and pulp mills receive less attention than any other machines in the mill.

If your electrical equipment is given an occasional inspection and ordinary care, electric motors will outlast by years almost any other machines used in the mill and with considerably less cost of maintenance.

## PACIFIC SHIPPING NEWS.

It is reported that Norton Lilly & Co., Produce Exchange Bldg., New York, who are agents for a line of freight steamers, will start monthly sailings beginning in October from Seattle and San Francisco for Marseilles and Genoa.

Late in October the Pacific Mail Line expect to start monthly sailings from Baltimore to points on the Pacific Coast through the Panama Canal.

Mr. E. Cunningham, Vancouver, manager for the Overseas Shipping Company, reports that his company is agent for the South American-Pacific line now having two boats sailing from Vancouver to points on the West Coast of Mexico, Central and South America. The next sailing will be the end of September. When operating with full service this line will have four steamers and others will be added as business warrants.



# What is a Sulphite Bond?

By Bryant Venable,

Secretary, the Whitaker Paper Company, and Assistant to the President.

The recent effort of the Federal Trade Commission of the United States to prescribe a minimum content of rag pulp as a condition with which paper manufacturers should be obliged to comply in order to qualify their product as a bond paper has focused popular attention on the subject of bonds in general and of sulphite bond in particular. The commission itself, frankly, though perhaps somewhat unintentionally, revealed its own uncertainty by leaving a blank space in the stipulation which it submitted to the paper manufacturers in this connection. This blank space was to be filled with the figure indicating the required percentage of rag at such time as an agreement should be reached relative to this important matter. That no such colutory agreement could ever be reached was apparent from the beginning, inasmuch as the trade is accustomed to bond papers the rag content of which varies all the way from zero to 100 per cent., with the sulphite content in the inverse ratio.

Nor is there, in any dictionary or encyclopedia of general use, a definition of bond paper that may be regarded as authoritative. Originally, the term undoubtedly was used to indicate papers which, owing to their strength, permanency and adaptability to the purposes of the scribe, could be used to good advantage for financial documents, which, in common with legal instruments, were generally designated as bonds. With the development of modern business and the introduction of systems that involve the use of paper in the enormous quantities with which all business people of the present generation are familiar, there was a corresponding development and subdivision in the paper trade. New terms and designations were added to the vocabulary of the paper man and old terms underwent modifications in meaning to keep pace with the changes in the uses to which various kinds of paper were put. The term "Bond" thus assumed a more general significance and became the designation commonly accepted for those grades of paper that were adaptable for all forms of written documents for which a very considerable degree of permanency was essential. In this sense there is no arbitrary line of demarcation between a bond and a ledger paper, the distinguishing character of the latter being its greater weight, often accompanied by harder sizing and ampler provision for frequent and severe erasure. "Flat writings," on the other hand, irrespective of their weight, are deficient in the elements of strength, formation, texture, folding qualities and permanency that are essential to those purposes for which bond papers are particularly adapted.

In the absence of a scientific definition of the term "bond paper" the trade has accepted certain standard characteristics of strength, appearance and utility as the criterion of bond paper values quite as essential as the technical considerations of raw material. The highest qualities of bond papers represented, for example, by our own St. Nicholas Linen Bond, are those which are made exclusively from new, clean, white clippings of the materials used in the manufacture of collars, cuffs, shirt bands, etc. Papers of this grade are, of course, very costly, and the available supply,

severely limited at best, is totally inadequate to meet even a small percentage of the requirements of the market. As partial offsets to these limitations, innumerable expedients are employed by the bond paper manufacturers, including the use of less expensive rags, carefully washed and bleached, and the incorporation into the pulp, before it goes on the paper machine, of certain percentages of sulphite.

Probably no word in the vocabulary of the printer is more generally used and less accurately understood than the word "sulphite." In non-technical language this may be defined as the fibrous part of spruce timber, from which all resinous and non-fibrous matter has been extracted by chemical reaction. This sulphite pulp, after thorough washing and bleaching, differs very little in appearance or chemical and physical characteristics from pure rag pulp. The fibers, however, are less long and less strong than those of high grade linen, although they may be, and not infrequently are, longer and stronger than the fibers of lower grade old rags. The essential facts to be borne in mind, therefore, when comparing the respective merits of a pure sulphite paper and all rag paper, are not so much the arbitrary distinctions between rag and wood. The kind of rags and the kind of wood and the skill of the paper maker are the considerations which determine the quality of the finished bond.

As a matter of fact, it is not only possible, but eminently practical, to manufacture from 100 per cent. high grade sulphite a bond paper that is superior in every way to the bond papers made by less modern methods from 100 per cent. rag stock of lower grades. The final evidence of this is found in our own basic bond, a paper that tests from 25 per cent to 33 per cent. stronger than what in the past have been considered the standard sulphite bonds. Not only so, but Basic Bond, under the Mullen tester, compares favorably with the high grade rag bonds and entirely out-classes many of the well known medium and low priced bonds that are made of combination rag and sulphite. In surface, color, formation, finish, similarity between the two sides of the sheet, folding qualities, writing qualities and printing qualities Basic Bond is a revelation of the art of modern paper making.

## NO WAY OUT FOR THE EDITOR.

When a plumber makes a mistake, he charges twice for it.

When a lawyer makes a mistake, it is just what he wanted, because he has a chance to try the case all over again.

When a carpenter makes a mistake—it's just what he expected.

When a doctor makes a mistake, he buries it.

When a judge makes a mistake, it becomes the law of the land.

When a preacher makes a mistake, nobody knows the difference.

But when an editor makes a mistake, no mercy is granted.

Am I as careful as I can be?

## Pulp Industry in Finland

By Jacob de Julin, President of the Finnish Wood Pulp Industry.

Finland has for years imported from the United States of America not only victuals but its entire consumption of cotton and also a very great extent agricultural machinery as ploughs, motor ploughs, hay making machinery, etc., as well as a great proportion of the machinery now used in our paper mills, and as for typewriters, office appliances, motor pumps, etc., goods of American production only are selling on the Finnish market.

On the other hand Finland as an exporting country to America is not of any importance worth mentioning on account of America being in the favorable position of producing herself practically all that we would be in a position to supply to her.

It may be of interest to the American public to know that since the beginning of this year (1919) flour for more than \$25,000,000 has been imported to our country from the United States.

Our native land is distant and small and comparatively poor and has for these reasons not been able to arouse the same kind of interest as other bigger and more prosperous countries but there was, however, noticeable during the last few years before the war a distinct increase in the export from this country to Finland, which export, no doubt, could yet increase considerably would only the American exporter consider the question of applying for this business with Finland terms of payment suitable to a small and comparatively poor country like ours.

One thing which at present makes the import of American goods into Finland very difficult is the unfavorable rate of exchange of the Finnish mark which from having had the normal value of Fmk. 5.25 for one dollar now is quoted as over 9 marks. And this high rate of exchange is mainly due to Finland having during these last five years on account of conditions caused by the war been practically cut off from every business connection and export to the Allied countries, but there is no doubt that as soon as the export from Finland has been got going again—the export to England and France already having started—this for us unfavorable state of affairs will cease.

Finland has today the largest stock of timber in the whole world held by any single country, which stock consists of 14 million standard sawn timber ready for shipment and has the value of \$135,000,000.

Finland's yearly production of wood pulp and paper amounts to 450,000 tons, which expressed in money is equal to at least \$60,000,000. Of this is the wood pulp of greater interest to the American importer as before the war this country used to import pulp from Finland and knowing that the Finnish pulp both in quality and prices can compete today with any pulp in the world we hope to sell a great deal to this country to which already two steamers with wood pulp are on their way. The total amount of the Finnish export of wood pulp for the next twelve months is calculated to be about 200,000 tons, corresponding to a value of about \$16,000,000. In this connection I might mention that until the Bolshevist revolution in Russia, Finland supplied that country with 60 per cent. of its consumption of paper and has now started to export paper also to the American market.

The Finnish Government's commercial mission, which

has visited England, France and Italy, and the work of which in England has been greatly appreciated in that country which is proved by the mission having stayed as the guests of the English Government for several weeks in London has been sent out by the Finnish Government to bring into realization the long nourished desire in Finland for an intimate commercial connection with the Allied countries. And our special task here in the United States is to put American business men into touch with Finnish import and export organizations and firms.

In our country there is a strong feeling in favor of the United States, the country which through the medium of its great President, Mr. Wilson, has declared that it will protect the right of the small nations. And of Finns who have gone abroad the greatest contingent has found its way to America, which proves what a great esteem this country has had in the minds of the Finnish people and few of the Finns over here have any desire to leave it again. The Finns now living in this country amount to about half a million. And we have kept ourselves well acquainted with the business methods and organizations over here which always have been set as an example for our own.

Finland's natural wealth are her vast timber forests and her enormous resources of water power estimated at 3,000,000 horse power, of which today only about one-tenth is utilized. The thousand lakes of Finland connected through numerous canals makes the country through its natural water ways more suitable for industrial enterprise in which wood is used as raw material than any other country in the world.

The industrial condition in Finland are today quite satisfactory. The mills are working at full speed as far as they are able to secure raw material and there is practically no unemployment to speak of and labor troubles are today quite unknown. The eight hour working day is already over a year ago stipulated by law and the working people are getting the same income for eight hours work as they did before for twelve hours, in which connection may also be mentioned that already for ten years the bigger paper mills and pulp mills engaged in continual night and day work have applied the eight hours' shift system without this having been stipulated by any law.

A part of the Finnish working men were fighting on the side of the Bolshevists in the early part of last year but are now back again in the works of their former employers and are working with much more interest than before the time of disorder caused by the Bolshevists. They are doubtless realizing that good wages and industrious work is better than anarchy and the destruction of Bolshevism. They know what Bolshevism is and have suffered so much through the difficulties that it brought with it that there is surely no danger that Bolshevism would have any market in Finland any more.

The political conditions today in Finland are quite normal. The new parliament which was elected in the early part of March this year by both the men and women in Finland on the most democratic election principles has testified and proved the stability of General Mannerheim's Government, which carrying out a policy of far sighted statesmanship on democratic principles, have got the country quite settled. And this good result is to a great extent due to the help the Finnish Government has received from the American Food Administration and especially through the interest Mr. Hoover has shown in the relief question of

Finland. And now the recognition by the Allied Governments of Finland as an independent state has furthermore strengthened the position of our Government.

Today when labor troubles and dissatisfaction among the working people is a present day feature in almost every country, I am happy to state that this unsound desire to strike which, as far as we are concerned, ended up in Bolshevism, has been quite cured in our country and our working class has now recovered its senses, fully realizing the value of their leaders who, smitten by the plague themselves, lured the sensible working man into this adventure and when seeing that it was all up escaped into Bolshevist Russia to put themselves out of the reach of the punishing arm of the law for their treason.

### VEGETABLE PARCHMENT PLANT NEARLY BUILT.

Construction on the new buildings of the Canadian Vegetable Parchment Co. at Merriton is practically completed and the work of installing the machinery is



now proceeding. It is expected that the new plant will be in operation turning out genuine vegetable parchment in about six weeks' time.

### PENN YAN PULP MILL PASSES TO NIAGARA COMPANY.

The Niagara Wall Board Company, Inc., has bought the pulp mill of the Moore Paper Corporation of Penn Yan, N. Y. By acquiring this mill the Niagara company, recently organized by Buffalo men who have grown up with the wall board industry, control their own supply of semi-manufactured fiber used in the production of wall board.

The Moore mill is a well equipped pulp plant and additions and improvements under way will particularly suit it to production requirements of the Niagara company. In addition to the pulp mill at Penn Yan, a factory building has been secured a short distance from the mill for a finishing plant. This building will be immediately equipped for production of Niagara wall board.

Machinery and other equipment necessary for operation of the finishing plant is in course of construction and will be shipped early in September. Arrangements have been made for installation of this equipment and active operation of both pulp mill and finishing plant should begin early in October.

By locating both plants in the same city and alongside the same railroad, the Niagara officials say, the most practical arrangement has been affected for economical and efficient production. Both plants will be operated by water power and electricity. The Penn-

sylvania and New York Central railroads afford excellent shipping facilities.

General improvement in building conditions throughout the country assures a prompt demand for output of the product as soon as the board can be placed upon the market, they say.

Officers of the company said yesterday many orders have already been received from dealers and wholesalers who desire shipments as soon as production is under way.

The officers of the company are: J. B. O'Brien, president; C. C. Hullinger, secretary and treasurer; directors, William P. Luigart, William J. Keller and S. R. Armstrong.

### PAPER MAKER KILLED.

Cornwall, Ont., September 13.—Frank Ford, a machine tender in the mills of the Toronto Paper Company, here, was electrocuted Saturday night when he came in contact with some live wires on the roof of the roll room. Ford came to Cornwall from Pierrefield, N. Y., two years ago. He was born in Merriton, Ont., and was 39 years of age. He is survived by his widow, his father, John Ford, now of Ayers, N. Y., who was the first foreman in the Riordon Paper Mills at St. Catharines, Ont. The victim came from a family of paper makers, his grandfather, John Ford, sr., being the first paper maker in Canada. He is a nephew of J. Ford, paper manufacturer at Portneuf, Que.

### A VILLAGE DEVOTED TO PAPER MAKING

In some parts of Indo-China, the natives employ various fibres in the attempt to supply their own paper. The Village du Papier, a suburb of Hanoi, owes its name to the fact that most of its 2,000 or 3,000 inhabitants make paper from the bark of a small "paper-tree," a species of mulberry, found on the Black River in Upper Tonkin. This bark is soaked in lime made from the lime-stone of the village, heated by crude furnaces fashioned by hand under natural lime-stone vats, pounded by pestle into a fine mash, then dissolved in water until a thin paste is reached. This paste is dipped by bamboo-screen sieves, about 12 x 24 inches in dimensions, until a slight film covers the screen. This film is spread on top of others, and each is taken separately or several together, and spread with a brush on cement radiators to dry. A single sheet of paper is almost as thin as tissue; but the desired thicknesses may be obtained by spreading several films on the radiator and drying them together, or by pasting the requisite number of sheets together, after drying.—"Paper Maker," London.

### CONTROLLER PROTECTS CANADIAN PRESS

Ottawa, Ont., Sept. 17.—The newsprint enquiry is on again off again, today's session before Commissioner R. A. Pringle, having resulted in an adjournment to the second week in October. Today's feature was the announcement by the Commissioner that Canadian papers are in a serious way for newsprint, some finding it hard to obtain their requirements. "But," he added, "so long as I am a Paper Controller, I am going to see the Canadian press supplied with paper. There is a lot of it in this country, and if the Canadian mills have been making contracts outside the country I can't help that. It is a secondary question."

## BRITISH TRADE NEWS

From Our London Correspondent.

London, Aug. 29, 1919.

Fires have been rampant recently in some of the paper mills in England. Apart from spasmodic outbreaks in raw material stores, a good many mills have suffered considerable damage, which not only affects the export trade, but throws a good many people out of employment. The Ford Paper Mills at Sunderland were destroyed by fire this week. Valuable machinery was involved in the flames and the cost of the conflagration amounts to several thousands of pounds. The first paper to be made from exports was made at these mills. It was introduced by the manager of the mill at the time and since then his name has passed into history as a result of his success. There was also an outbreak at the Soho Mill in one of the three large stores used for esparto and wood. It is estimated that 460 tons of esparto perished in the fire and 20 tons of straw. Fortunately, a good supply of esparto was available so that the mill was not thrown idle. Rag and waste paper stores in various parts of the country have lately been figuring prominently in the fire list. Wastepapers, however, are plentiful, but mills cannot afford to lose stocks of rags, the demand for which is keen at all times of the year for good quality papers.

### The Rumored Syndicate.

"What about the news mills merging into one great combine, or syndicate?" I said to a big paper man the other day.

"First I have heard of it," he retorted sharply. Then after reflecting, he asked with a twinkle in his eye, as if I had something good in store for him, "Who is setting this rumor about?"

"There is some mention of it in a Canadian financial paper and I want to know the truth about it," I ejaculated.

"Well," replied the big newsman, "you can take it from me there is nothing in it. Of course, there are developments going on by individual mills, but to form a syndicate is beyond the dreams of avarice. Now just imagine all the British news mills combining! Think of the competition that exists between them—and their secrets. Would it be possible for them to all agree in a state of secret compact to secretly merge into one another? It is preposterous."

Next day I came across another prominent mill owner in London and I popped the question: "Are you in this syndicate that is being formed?"

"No," was the retort. "And we don't know of it either."

I am not satisfied yet, as I want to find out what gave rise to this rumor about the syndicate and its origin.

### Is It "Protection" or Monopoly?"

I am hearing complaints that some of the newspapers cannot get enough paper. The complaints spring mostly from offices where the policy of "Free Trade" is advocated and they may be advanced as a set-off to keep trade within the Empire. A London Labor newspaper apologized for its size the other day and said it could not get enough paper to be enlarged. The "Yorkshire Observer," a prominent north country paper of great influence, says that the Government wishes to permit paper to be imported, except within prescribed limits. "Because of this exclusion," it says, "British paper commands a value which is above the world price. It is a fine thing for the British paper manufacturers no doubt." This looks as if the

producers of paper had worked up the Government into a state of "protection." Before the war mill owners were divided on the policy of "Free Trade" and "Protection," and it would be dangerous—unless you wanted to raise a controversy—to mention either of the subjects in print, because the paper industry was full of politicians, professional and otherwise. Now the allegation is hurled at the "Free Traders"—that is men who welcomed paper from Germany just as much as they did from Canada (so long as it did not touch their own pockets), that they are out for "Protection" on the lines set out some years ago by the late Joe Chamberlain.

### Is It Profiteering?

The lively state of newsprint recently, however, may make it difficult for some newspapers to obtain a pre-war supply, as after the armistice there was a wish to increase the size of newspapers. Exports also developed. But the "Yorkshire Observer" says the British Government has "ordained deliberately that for the benefit of the paper makers here we shall have scarce paper and dear paper." Then it goes on to say: "Continental paper is to a large extent denied to us. Canadian paper we are permitted to buy, but Canada cannot get ships in which to send it. Paper users in this country employing 400,000 people are denied ample supplies in order that paper-making concerns employing only 39,000 may have something approaching a monopoly. We do not know what benefit the 39,000 workers are getting but certain British paper company shares worth 8½ in 1914 have realized 17½ in 1919 and the shares of other British companies have appreciated between 70 per cent and 80 per cent. It is not necessary to point out the moral of this simple tale." Up to the present I have not seen any reply from a paper mill owner refuting these allegations. Considering the number of foreign agents selling against him in 1913, I should imagine someone would "take up the case."

### The Pulp Market.

Some newsprint sellers are hooking half a cent more on their prices, and the same may be said of esparto papers. The pulp markets are very firm, Sulphite showing tendencies of hardening, which may be expected at this period of the year. Kraft is also on the upward grade. There is a good demand, and supplies of groundwood are plentiful and quotations firm. Sweden is now asking a trifle extra on quotations and consequently Norwegian pulps are much acquired for. Chemicals are dull and unchanged in values. There is no demand for size lately.

No pulp is arriving in England from Russia. Small parcels have come from Finland during the past two months.

Prospects for Canadian pulp and paper in England were never so rosy. The shipping difficulty must be attacked with a vengeance.

Hartlepool's Pulp and Paper Co., Ltd., have developed an interim dividend of ten per cent.

Kraft paper is in good demand at present. This is one of the reasons why Kraft pulp is hardening in price.

Charles V. Syrett, of Toronto, manager of the Victoria Paper and Twine Co., who along with Mrs. Syrett has been spending the past two months in Great Britain, is expected home this week.

## Paper Trade Association Elects Officers

The Canadian Paper Trade Association held its annual meeting at the Ritz Carleton Hotel, Montreal, on Tuesday and Wednesday of this week there was a very satisfactory and representative attendance, members registering from all over the Dominion. Mr. A. E. Donovan of the Canada Paper Company, Montreal, presided at the business session Tuesday morning. In the afternoon sectional meetings of the wrapping paper section was held. On Wednesday the wrapping paper section resumed its session and the book and writing section held their separate meeting. On Wednesday afternoon a joint meeting of mill men with the Paper Trade Association was held and the already happy relations between the two parts of the industry were further cemented along the lines of mutual appreciation and good fellowship. The object of the joint meeting was to better the conditions existing in the paper trade in which the manufacturer, the jobber and the consumer are all vitally interested.



John Martin, President, Canadian Paper Trade Association.

On Wednesday evening the visiting members were entertained by the Montreal members at an informal dinner at the St. James Club.

The business session on Tuesday consisted of the reading of the President's address and the election of officers.

A paper was read by Mr. Bogue on "The Advisability of Impressing on the Manufacturer the Propriety of Recognizing the Legitimate Jobber as the Legitimate Outlet for His Product."

A paper was also prepared by John Martin on "The Necessity for a Better Understanding Between the Manufacturer and the Jobber as to Manufactured Lines," which was presented at the meeting.

It was decided that the association publish a booklet explaining the trade regulations, which by long practice, have become trade customs relating to the distribution of paper.

The report of the treasurer showed a very satisfactory balance.

Honorary Pres. John F. Ellis, Pres. John Martin, John Martin Co., Winnipeg; First Vice-Pres., C. W. Graham, Buntin-Gillies & Co., Hamilton; Second Vice-Pres., C. H. McFarlane, McFarlane, Son & Hodgson, Montreal; Treasurer, E. S. Munroe, Wilson, Munroe & Co., Toronto; Sec., N. L. Martin, Toronto; Auditors, Alex. White and Robt. Finlay.

The following committees on new relations were appointed:

Book and writing section—Fred Smith, C. H. McFarlane, E. A. Schofield, Fred Halls and Mr. Scott.

Wrapping paper section—Jas. Home, C. J. Kay, E. A. Schofield, Mr. Syrett and Mr. Nixon.

Among the members present were: Ed. Bogue, McFarlane, Son & Hodgson, Montreal; E. Dawson, W. V. Dawson, Ltd., Montreal; A. E. Donovan, Canada Paper Co.; Messrs. Scott and Reed, Barber-Ellis Co., Toronto; Capt. E. C. Nicely, J. M. Dent & Sons, Toronto; John Gibb, Clark Bros., Winnipeg; Jas. Home, Beveridge Paper Co., Montreal; C. J. Kay, Columbia Paper Co., Vancouver; C. W. Graham, Buntin-Gillies & Co., Hamilton; Fred Halls, Fred Halls Paper Co., Toronto; A. Clark-Hunt, John Martin Paper Co., Winnipeg; J. B. Larkin, Federal Paper Co., Montreal; Peter Rolland, M. V. Haney and Mr. Eccleston, Rolland Paper Co.; H. E. Livingston, Toronto; Fred Smith, Smith Davidson & Wright, Vancouver; C. H. McFarlane, McFarlane, Son & Hodgson; E. A. Schofield, Schofield Paper Co., St. John, N.B.; E. S. Munroe and Major Bruce Munroe, Wilson Munroe Co., Toronto; L. P. Turgeon, Turgeon Paper Co., Quebec, and N. L. Martin, Secretary.

### MIXED KLIPSTEIN AND KALBFLERSCH.

While no complaint has come from either party, the Pulp and Paper Magazine realizes that misinformation was given in our issue of September 11, when it was stated that A. M. Henstis represents A. Klipstein Co. We confused Klipstein with Kalbflersch, whom Mr. Henstis represents.

A. Klipstein Co., Ltd., have their own office at 12 St. Peter St., Montreal, where the requirements of the paper and pulp industry for cottons and chemicals will be well cared for. The Canadian branch under the capable charge of Mr. William Ferguson, with whom the editor is personally acquainted. We beg his pardon.

### NEW PATENTS.

**K-7. Refining Engines for reducing Paper Pulp.** R. J. Marx, London, Eng. Pat. 122, 964, 4.4.18 (appl. 5732-18).—J. S.

**L-0. Leather substitutes, waterproofed materials and the like.** S. Goldreich and M. Stern & Co., Engl. Pat. 123, 101, 8.2.17, (appl. 1975-17). A textile material (such as cotton, of flax, or paper, or cellulose) is impregnated with a waterproofing preparation consisting of a mixture of gilsonite (900 lbs.) and an oxidizable oil such as boiled linseed oil (210 lbs.) with or without the addition of eucalyptus oil (8 zoz.) as an antiseptic agent.—J. S.

## British Markets Free To World

Von Schlegel, the German critic, once wrote that the historian was a prophet whose eyes are turned to the past. This epigram sums up the disposition and the position of the leader of the Imperial Government today on his recent decision and his followers also in the Cabinet Council to throw open the markets of the United Kingdom to neutral and other foreign countries. England is ablaze today over the decision. The free traders say it is a smack in the face for the Protectionists and the latter say it spells ruin for the country. The Imperialists say Canada has been betrayed by the Government in their policy and the throwing open of the markets has shut the Dominion out in preference to be given German paper. For the past few days I have watched the British mill owner scratching his head as he thinks of the future. The "Star" says that the embargo on the importation of foreign paper has been lifted and the paper using industries, which employ half a million persons, will benefit from a measure which will only prevent the paper makers from continuing to make the huge profits that they have shown during the war. There is no doubt a great majority of the mill owners would like a system of protection and the fact cannot be denied that they have had good innings in trade since 1914.

### What German Trade Means.

The German paper makers have always had their eyes on the British markets. Their export trade in paper and paper making materials was a large one and no doubt this has had some influence with the Government in arriving at their decision, because, it must be remembered if the Teuton is not given an open market for his goods the compensation levied on him by the Allies to cover part of the cost of the war, would be collected with some difficulty. But dumping of paper will receive a rude check. The Government has stated that they intend to take power during the autumn to prevent dumping from Germany. This, however, is an old red herring drawn by the Free Trader across the track of the Protectionist, who is out for trade within the Empire and a tax on all foreign imports. Prior to the war Germans hit the paper mill owners of England and Scotland very hard in competition. Paper from foreign countries was imported here to the value of £7,104,849 in 1913—I take this year because competition was at its best—and from British possessions £569,570 worth. From Scandinavia and Germany the bulk of paper came, whereas the foreigner only took paper from British paper mills to the value of £1,399,007—a difference of £5,705,842 in favor of the foreign competitor. In papermaking materials foreign countries sent us £5,515,531 worth and British dominions £900,272 worth, Canada being the only contributing dominion of note.

### German Methods.

The British paper and pulp man is out against a keen competitor now in Germany. I am waiting to see what their stocks are like—from all accounts they are heavy. The next question will be the price. British mills will not be able to pay the price of pulp at present and go back to the pre-war price for paper. In 1913 news sulphite cost about £8.10s; today it is up to £24.10s. That is why paper cost more. But the Germans will be out to undersell us, and if they have their industrial state councils still in vogue, as in pre-war days, when an industry was subsidized and encouraged to compete in the markets of the world, the ambitions

and objects of the Free Trader will be fulfilled by cheap foreign paper to the detriment of the Dominion and British paper mills. That is one reason why the British mill owner is up against the Government today. And that is one of the reasons why the "Star" is writing against him. Like most people the "Star" wanted its paper at pre-war price, but fails to recognize the fact that the cost of production is greater. The "Star" itself found that through the exigencies of war it could not sell one copy at a cent—it jumped to two cents. Why? Because the cost of production was greater. There is an old adage: "People in glass houses should not throw stones."

### State of the Germans In 1913.

The British Commercial Attache in Germany (Sir Francis Oppenheimer) writing on the Teutonic paper industry of 1913 states that the value of the export increased by 30,000,000 marks. The most noteworthy changes in the German foreign paper trade was to be found among the figures of the British-Germanic trade. For the German paper trade and industry the year 1913 was one of considerable struggles. Though the cost of the raw material had risen considerably, there was no possibility of raising the price of the finished article, because during the previous years the capacity of output had been greatly increased, which resulted in a very keen competition with the result of the usual cutting of prices. Only towards the end of 1913 could prices be raised, because under the new tariff the export to the United States could be resumed; yet in the American market a very strong Scandinavian competition had to be met. Sir Francis then goes on to deal with the introduction of machinery for labor saving and I am predicting that this machinery will now be turned to some use to feed the British market. German paper machines, it must be remembered, were not all idle during the war. The German army consumed an enormous amount of paper and even their sand bags were made of paper in their trench warfare. We can only wait developments now and see what our foreign competitors can do in the market. When the dealers get to work we may see some undercutting in prices.

### The Markets.

Though the demand is active for sulphite, prices have not as yet soared. There is a tendency for quotations to harden and sellers are of the opinion that the opening up of trade now may have a material effect on sulphite and groundwood values. I interviewed a pulp man this week:

"Do you think," I asked, "that the throwing open of the markets will affect pulp prices?"

"I believe pulps will be dearer. Germany got a lot of wood from Russia for their chemical pulps. Russia is now unsettled. France wants pulp. Scandinavian mills are not active and Germany, if her paper stocks are not large, will want all the pulps she can get. That is my opinion, but of course we are not out of the wood yet. We don't know much yet about Germany's position. But I believe present prices will be maintained for some time to come," he added.

"So you think paper prices will not be much affected?" I inquired.

"My reply to that question is: If pulps are not cheap you cannot expect paper to be cheap and I think the Germans will want a fair price for their paper also. They tried hard before the war to get increased prices on certain classes. They may succeed now. In 1913 and 1914 they had labor troubles, now they have dearer pulps to get on with."

# Paper Trade Association The Tie That Binds

By John F. Ellis, President Canadian Paper Trade Association.

On the 4th of March, 1918, a small but very enthusiastic body of Western paper merchants met in Winnipeg and discussed the matter of forming an association of paper dealers throughout Canada. As a result of this meeting a convention of those interested was called in Toronto on the 3rd and 4th of April following. This meeting was attended by the representatives of some thirty firms, and resulted in the formation of the Canadian Paper Trade Association. The organization has since been completed and now comprises the majority of the recognized jobbers of paper throughout the Dominion—from Coast to Coast. The Association is composed of five branches, namely—Maritime, Quebec, Ontario, Prairie Provinces and

be attended by a solid body of paper merchants, united in advancing the interests of Canada's premier industry.

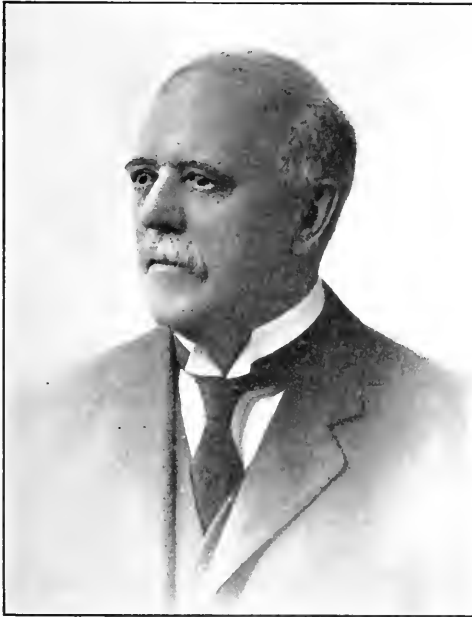
A number of meetings have been held during the year which have done much to create a spirit of good feeling and harmony among the members, and dealt with many subjects of mutual interest, assisting materially in finding ways and means of meeting the many problems with which we have been faced during the months of stress and strain incidental to the war. Peace and victory have come to us and brought new problems—questions of soaring costs and high taxation, questions of a demand for the goods we sell, with which production does not seem to be able to compete, and questions of world's markets of which we have hitherto scarcely dared to dream. It must appeal to everyone here that the multiplicity of details with which these problems bring us face to face can be worked out for the common good to very much greater advantage by considering them together than would be possible by each one working out these matters for himself. Involved in these questions are matters of our relationship with the mills; tomorrow we hope to have the pleasure of discussing some of these questions with the representatives of the mills.

At the first meeting of the Association it was decided that this organization was not to have as its object the enhancing of prices, nor was it in any sense to be one to control or fix the price at which any member was to sell his wares. This is a matter which each individual has to work out for himself. An old saw has it that "competition is the life of trade." Competition, however, may be carried to extremes, engendered by foolish jealousy, mutual distrust and senseless strife, resulting in ruin to the weak and stifling the ambition of the young firm with moderate capital. By creating among its members a spirit of good fellowship and harmony, by helping each to understand that the "other fellow" while selling in the same markets is not necessarily a rogue, by building up high ideals of business ethics; by demonstrating that the merchant who, for varied reasons best known to himself, sets out to do business at a loss, hurts chiefly himself and often brings disaster to others. I say that by these means an organization such as ours, while retaining all the stimulating and healthful effects of legitimate competition among its personnel, robs our business lives of bitterness and detracts from competition those elements which are nothing but hurtful to everyone concerned.

I believe that even in these days of enlightened accountancy there are still some firms, even in the paper trade itself, who are still working out selling prices by some rule of thumb method belonging to a by-gone age. I read a story sometime ago in a trade magazine illustrating the necessity of an accurate knowledge of the cost of doing business:

"A professor at a medical college had been lecturing upon the strength and value of a certain medicine, and at the end of the talk began a short examination.

"Now, sir," said he to one of the students, "in a case such as I have described, how much of the medicine would you administer and how often?"



John T. Ellis, Retiring President, Canadian Paper Trade Association.

British Columbia. The original plan was that each of these branches should be subdivided into three sections—Book and Writing Section, made up of those firms selling fine papers; Wrapping Section, made up of those firms selling coarse papers, tissues and twines; and, thirdly, Manufacturing Stationers and Envelope Makers. The Book and Writing and Wrapping Sections have both completed their organizations throughout the various branches. No progress has been made in the organization of the Manufacturing Stationers and Envelope Makers. Perhaps, during the coming year, we may be able to welcome this branch of the trade as members so that our next convention will

\* Delivered at Annual Meeting of the Association held in Montreal, Sept. 16-17, 1919.

"A tablespoonful every hour," was the reply. A short pause and the student said hastily, "If you please, Doctor, I would like to change my answer."

"Too late," the professor solemnly said, "your patient is already dead."

The future of Canada is in many ways tied up with the future of the paper business. To-day the public debt of Canada is \$1,800,000,000, an amount equal to the gross deposits of all the chartered banks in the land, as compared with \$350,000,000 before the war. The reduction of this debt is a question in which every business man, individually, and every trade, collectively, is vitally interested. I do not need to tell you men that to pay this debt we must export more and import less. Not only must we seek to supply our own needs but we must sell more and more of our products to the other nations of the world. The question of export trade is one which more closely affects the mill than it does the merchant, but in that of imports we have a lively interest. It is to the great credit of this young country that to-day our Canadian mills are manufacturing paper which is the equal of any in the world. There is no truer method of showing our Canadian patriotism, there is nothing we can do to help the industry in which we are so concerned, and the country which we so dearly love than to sell to our customers paper made in Canada by Canadian workmen. Foreign mills have all been busy during the war with their local demands. Word comes to us now of foreign countries, yes and of enemy countries, too, looking for the re-establishment of their export trade. This is the time for every Canadian merchant to ask himself in what manner he can help in seeing that every sheet of paper used in Canada is made in a Canadian mill.

It is gratifying to notice in passing that imports of paper into Canada have been showing a steady decline, while exports have shown just as satisfactory an increase. During our last fiscal year, for instance, we exported approximately \$100,000,000 worth of pulp, paper and pulp wood—truly a gigantic total and a banner year for the industry. While the record for the past three months does not indicate that this figure will be reached this year, owing to the close of the war having created new conditions with our best customer, the United States, there is every reason to believe that Canada will continue in the front rank of the world's suppliers of pulp and paper. Dominion legislation prohibiting the export of pulp wood would go a long way toward still further enhancing this total in dollars. If our parliament could reach the conclusion that this country, which is blessed by nature with such a limitless store of raw material for paper, would export this material only in the form of the finished article a new chapter would be written in the history of the paper industry in Canada.

Domestic trade conditions were never better than at present. There is more fine paper being consumed than ever before, wrapping papers and tissues too are in strong demand, coated mills are working to capacity and the demand for the best of everything is on the increase. Stocks are becoming smaller and prices in sympathy with advancing wages and the increased cost of raw material, distribution and marketing show no evidence of a probable decline but rather of a further rise. Forecasting the paper market is, at best, a hazardous undertaking but a review of existing conditions on this continent does not indicate an immediate reduction. On the other hand, I see no reason to believe that we are

likely to be called upon to face any famine in paper in this country. We hear of new mills about to come into being, and of existing mills making plans for increased production. As has been so often said, there is no limit to the supply of raw material and our mills are declining to make outside connections until the demands of their regular Canadian customers are at least reasonably supplied. We have every reason, therefore, to look forward with high hopes to the future and I trust there is no firm here represented whose expectations of a banner year will not be realized.

The program before us to-day should open the way for the discussion of a number of subjects of first importance to us all. It speaks well for the future of our Association that so many have journeyed long distances to attend these meetings, and I am convinced that when you return home after our deliberations have been concluded, you will realize that the time has been well spent. If these meetings meant nothing else than that they give us the opportunity to meet one another, to become better acquainted with those associated with us in the same business, to get a bigger and broader grasp of the condition of the paper industry and of the varied problems with which we have to deal day by day, they would be well worth while. I am persuaded that we will all return to our offices with a fresh inspiration toward co-operation and mutual help and with the feeling that by working together we can the better find and follow the way along which lies better business, better methods and better conditions for us all.

#### T. A. P. I.—DON'T DELAY ANY LONGER

Please notify the Chicago Local Committee at once of your intention to be present at the

#### FALL MEETING

of the

### TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY

Chicago, September 24-27, 1919.

Convention Headquarters, Registration Booth and Business Sessions at the Coliseum and Armory where also the Fifth National Exposition Chemical Industries is to be held the same week.

The Entertainment Committee announces:

Wednesday Evening, September 24th—Banquet, Union League Club.

Thursday afternoon, September 25th—Luncheon and Inspection Trip Sears-Roebuck Plant, including Wall Paper Mills.

Thursday Evening, September 25th—Smoker, Union League Club.

Friday, September 26th—Visit to the U.S. Forest Products' Laboratory at Madison, Wis.

As no hotel has been chosen as Headquarters, it is immediately necessary that you make your own hotel reservations in Chicago.

You are especially urged to make your banquet reservations early; Banquet tickets for your guests may be secured at \$3.00 each.

Address all communications to

THOMAS H. SAVERY, JR.,

Chairman Local Committee,

1718 Republic Bldg.,

Chicago, Ill

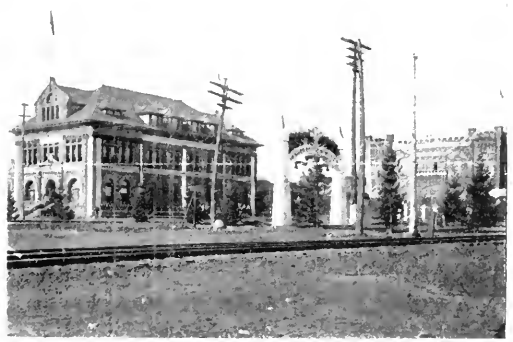


**PRINCE OF WALES HONORED SPANISH RIVER MILLS.**

Sault Ste. Marie was honored on Sept. 4th with a visit by His Royal Highness the Prince of Wales. The party arrived about nine o'clock in the morning and were immediately taken to the High School grounds where a very concourse of people was gathered. Ad-

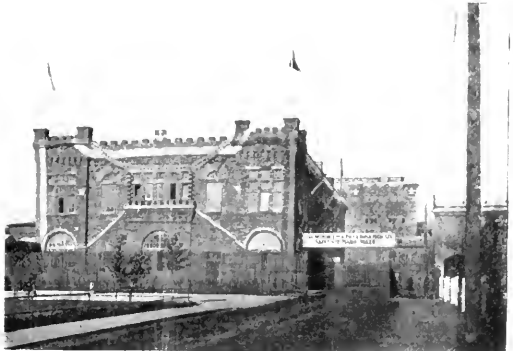
decorations. After these ceremonies the Prince and Royal Party drove through the streets, which were spanned with arches and other decorations, and saw points of interest throughout the city.

The Prince and Royal Party also visited the pulp and paper mills of the Spanish River Pulp & Paper Company. His Royal Highness took a keen interest in



resses expressive of loyalty and welcome were presented by the Mayor, from the City and from Patriotic Societies, after which the Prince received about

the processes and asked very many questions. The Prince showed he had a very keen intellect when applied to manufacturing processes and his questions



six hundred veterans of the war. He also presented war medals to about fifteen returned heroes or the next of kin of men who had fallen and received posthumous

were always to the point and for the purpose of bringing out something that was of value. During his progress through the plant he spoke to a number of the



workers, asking questions about their work and questioned a number of them about their war services. On leaving the plant the Prince expressed his great appreciation of what he had seen and characteristically volunteered the information that he had learned a lot.

The buildings of the company were suitably decorated, Huron Street approach to the works being lined with spruce trees and spanned by an arch built of pulp and paper, the whole being symbolic of the product of the plant. The accompanying photographs give a good idea of the decorations.

### HOW SULPHITE AND SULPHATE GOT THEIR NAMES.

A reader of the Pulp and Paper Magazine has asked for an explanation of terms "sulphite" and "sulphate." As others may be similarly puzzled, the reply to the inquiry will bear repeating.

Sulphite pulp gets its name from the fact that the chemical used in every case to separate the cellulose, which is the fibrous constituent from the other portions of the wood, is a salt of sulphurous acid. All such salts are called sulphites. The most common is calcium bisulphite, which is made by the action of sulphur dioxide (formed by the burning of sulphur) on limestone in the presence of water or by bubbling the gas through lime water. In most cases there is some magnesium bisulphite in the liquor due to impurities in the lime or limestone. The action of the sulphur dioxide gases is first to dissolve in water and form sulphurous acid which then attacks the lime or limestone and forms calcium sulphite. As more and more of the sulphur dioxide is fed into the apparatus we find the calcium sulphite, which is practically insoluble, gradually converted to calcium bisulphite, which is very soluble in water containing sulphur dioxide. In carrying out the process there is sufficient sulphur dioxide gas supplied to produce not only the bisulphite but to furnish a very considerable amount of free sulphurous acid. The furnished liquor, or "acid" as it is called, usually contains about 1% of its weight in sulphur dioxide combined with lime and 4 or 5% as sulphurous acid. Both of these substances enter into the action which causes the separation of the cellulose fibres from the other portions of the wood, although the reaction is a very complicated one.

The digestion of the wood, which is reduced to the form of chips, is carried out in large vertical digesters that are lined with acid-proof brick to resist the action of the liquor. The cooking takes on an average from 8 to 14 hours and the pulp is then washed and screened so as to remove any uncooked portion of the wood.

Sulphate pulp is manufactured in a similar way as far as the chipping of the wood is concerned, but the digesters are smaller than for sulphite and are not lined, since a steel shell is not affected by the alkaline liquor which is used for the cooking. The effect on the wood is the same as in the other cases. The time of cooking is very much less and the fibres are longer and of a distinctly brownish color which is not so easily bleached as the greyish tint of the sulphite pulp.

The sulphate process gets its name from the fact that the chemical which is used is sulphate of sodium, commonly known as salt cake, a by-product from the manufacture of hydrochloric acid. In starting the process for manufacturing the cooking liquor sodium carbonate is treated with lime and sodium hydroxide or caustic soda is formed. This is the basis of what is

known as the soda process by which pulp is made largely for the manufacture of book papers. In the digester the caustic soda combines with a portion of the wood substances and dissolves, leaving the cellulose fibre. The liquor which is washed out from the pulp contains a considerable amount of these sodium compounds. This black liquor, as it is called, is concentrated in evaporators and is finally dried and burned in the black ash furnace. Because of an unavoidable loss of time of some of the alkali during the process of causticizing and burning it is necessary to add some sodium salts to replace the loss. In the soda process this is done by adding soda ash to sodium carbonate, but in the sulphate process salt cake or sodium sulphate is added. As this material comes mixed with the dried and burning black ash in the furnace and in the melting pot the sulphate is mostly changed to sulphide and in this form passes on into the cooking liquor. The burning converts the sodium compounds from the wood into sodium carbonate which was the chemical originally added and so, when the burned black ash is treated with water we have a solution containing sodium carbonate, sodium sulphide, and a little sodium sulphate. When this is treated with quicklime we have our cooking liquor for the sulphate process containing sodium hydroxide (caustic soda), sodium sulphide and a little sodium sulphate.

There is a distinct difference between the qualities of the pulp made by these two processes. In the first place sulphite pulp is made from selected wood of high grade. The principal woods used are spruce, balsam fir, Douglas fir and hemlock, all of which have a comparatively low content of resin. For sulphate pulp it is possible to use wood of a lower grade and especially woods containing considerable resin such as jack-pine and southern pine. The sulphate cooking liquor dissolves the resin, which is not true of the sulphite liquors. The chips for sulphate pulp run somewhat larger than for sulphite and for this reason as well as on account of the milder chemical action the fibres produced are considerably longer and are more flexible. This strength and flexibility of the fibres as well as the length tend to produce a paper from sulphate of the highest strength and on this account kraft wrappings, as papers made of sulphate pulp are called, give very satisfactory results in length weights for wrapping papers, bag manufacture, etc. There is usually not very much difficulty in the market prices of unbleached strong sulphite fibre and sulphate fibre in the pulp form, but sulphite pulp can be readily bleached to a fine white color suitable for use in the highest grade of papers.

### LUMBER PRICES FOR 20 YEARS

Mr. William Little, of Montreal has sent to the Canadian Lumberman an interesting table, showing comparative prices of pine and other lumber in 1899 and 1919. This mean difference for various grades of pine in the 20 years ranged from \$25. to \$52.50.

Mr. Little adds: The table shows the increased prices of white pine lumber, the product of Ottawa mills, and yet there are some wise people who wonder why spruce and hemlock must take the place of white pine. The latter is rapidly advancing in price, while ordinary mill run spruce that was valued at about \$10. per M. feet in 1899 is now, just 20 years after, valued at \$42. per M. feet at the mills.

Safety First pays big dividends. Invest at once.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-4, A-5.—Report of Committee on Testing Moisture in Pulp.**—Pulp and Paper Magazine, 17, No. 33, p. 676, (1919). It is concluded that a strip sample taken clear across the sheet on wet lap or Rogers wet machine pulp is correct.—R. C.

**A-14. Dentention of Soda and Sulphite Wood Pulps in Paper.** R. Wasieky. Papierfabrikant, 16, 212-213, 228-229 (1919). Z. Angew. Chem. 31, Ref. 371 (1918). Pieces of the paper to be examined are boiled up once with a 0.2% aqueous soln. of gentian Violet, allowed to remain in the liquid for 2 minutes, rinsed with 95% alcohol, and steeped for 2 minutes in 95% alcohol containing 0.5% of hydrochloric acid. They are subsequently washed for 15 minutes in 95% alcohol, which is renewed once, and finally washed in water. Papers made of pure soda wood pulp lose the color entirely, whereas sulphite papers are stained a deep violet. Papers of mixed composition may be analyzed with an accuracy of about 5% by comparing them with known standards.—J.S.

**E-2. The utilization of waste sulphite liquor.** Bjarne Johnsen and R. W. Hovey. Pulp and Paper Magazine, 17, No. 30, p. 596; No. 31, p. 621; No. 32, p. 643, (1919). An abstract is given of Bulletin 66, issued by the Forestry Branch, Department of the Interior, Canada, which reviews all work done to date on sulphite waste liquor.—R. C.

**E-2. Sulphite-cellulose waste liquors; a new use for—(as fertilizer).** T. Brokorny. Chem. Zeit. 43, 64-65 (1919). The use of sulphite liquor as a carbonaceous fertilizer is based, in the first place, on the favorable conditions it offers for the development of fungi whereby the air of the soil and that near the ground becomes charged with CO<sub>2</sub> and in the second place, on the direct nutrition afforded to the growing plant by the sugars, organic acids, etc., contained in the liquors. The spent wash from sulphite distilleries must first be diluted before use in the soil.—J.S.

**F-2. Notes on lime sludge recovery.** B. C. Hope. Pulp and Paper, 17, No. 34, p. 701 (1919). Lime sludge containing 52-60% water is first mechanically thickened, thereby reducing the water content about 12%, after which it is filtered, using rotary filters preferably, the water content being further reduced 10%. The burning temperature should be from 1740 to 1920 degrees F. This may be reduced to 1450 degrees F. by burning in an atmosphere of superheated steam. About 13.5% of the total heat is used in breaking up the calcium carbonate, 17.5% for evaporating water, and 20% radiation loss.—R. C.

**H-0. The stabilization of bleaching powder.** Andrew N. Meldrum Soc. Chem. Ind. 38 (6), 80 T (1919). Commercial bleaching powder always contains water, and expts. were made with a view to ascertaining the effect of removing this water. The hygroscopic agents that were used were: (1) NaOH in powder, (2) CaCl<sub>2</sub> (basic) in grains (3) P<sub>2</sub>O<sub>5</sub>, (4) H<sub>2</sub>SO<sub>4</sub>. The results show that bleaching powder is more rapidly dried by alk. agents (NaOH and basic CaCl<sub>2</sub>) than by acid

agents (P<sub>2</sub>O<sub>5</sub> and H<sub>2</sub>SO<sub>4</sub>) and also that the tendency of bleaching powder to lose "available chlorine" is much decreased by desiccation.—J. S.

**K-6. The suitability of second cut cotton linters, cotton-shavings and hull fibre for paper manufacture.** Otto Kress and S. D. Wells. Pulp and Paper, 17, No. 34, p. 697; No. 35, p. 726 (1919). Paper 24, No. 15 (1919).—R. C.

**K-24. The baling of sheet news for export.** G. Meerbergen Belgo-Canadian Pulp and Paper Co., Pulp and Paper 17, No. 32, p. 639, (1919). Export bales should be divided according to the means of transportation available into those weighing over 500 lbs., over 200 lbs., and under 200 lbs. The top and bottom of the bale are protected by packing boards reinforced by heavy cleats. The entire bale is covered with one or two thicknesses of wrapper, an extra thickness being wrapped around sides and ends. The bale is then compressed and straps of one inch wide, 19 Imperial gauge iron passed around sides and ends. Other straps are passed over the packing boards. These straps are cut to length and have their ends folded over to form an eyelet. A buckle 2 1/4" x 3" with a center opening 1 1/4" x 7/8" is made of heavy gauge iron. The eyelets are passed through the centre opening and round pins then put through them so that on releasing the pressure on the bale, the straps will be firmly held.—R. C.

**L-7. "Cell yarns"** A. Leiveber, Kunststoffe, 8, 234-235 (1918). Chem. Zentr. 90 II, 24 (1919). "Cell yarn" is prepared from paper pulp which has never gone through the stage of finished paper. Soda wood pulp is broken down in the edge-runners, brushed out in the hollander, diluted with water and passed over sand-tables and strainers to the stuff chests. The stuff is run over the paper machine wire on which it is formed directly into ribbons. It is drained by suction boxes and passes from the couch-press on to a drying cylinder, which only removes a portion of the water, leaving sufficient in the strips for the subsequent spinning operation without re-damping. The moist strips are wound up in the form of flat rolls or narrow spools and placed in the spinning machines. The fibres in the yarns prepared in this manner are distributed almost entirely in the longitudinal direction of the strip and the fibres at the edges are not wasted, whereas in yarns twisted from strips cut from paper the fibres are distributed more or less in all directions.—J. S.

**R-0. National standards for the paper industry.** W. B. Wheelwright. Pulp and Paper, 17, No. 35, p. 724, (1919). It is proposed that all bonds be made so as to fall within one of the following classes: No. 1 Linen, Nos. 2, 3, 4, Rag, No. 5 Watermarked Sulphite and No. 6 Unwatermarked Sulphite.—R. C.

A. L. Dawe, secretary of the Canadian Pulp and Paper Association, who has been in England assisting the Canadian Trade Mission, sailed for Montreal Sept. 17, and is due next week.

## Splendid Program for T.A.P.P.I.

Chicago will be the Mecca for several technical associations next week, but none will have a more interesting and enjoyable program than the paper men. Thos. H. Sawery, Jr., 1718 Republic Bldg., is chairman of the local committee on arrangements. R. S. Hatch is president and T. J. Keenan secretary of the association.

All meetings will be held in conjunction with the Fifth National Exposition of Chemical Industries in the Coliseum, Wabash Avenue and Fifteenth Street, and Officers' Board Room, First Regiment Armory, Michigan Boulevard and Sixteenth Street. Admission by T.A.P.P.I. badge, or by special ticket sent to members.

Members are requested to register at the entrance of the First Regiment Armory during meetings and at T.A.P.P.I. booth No. 237 in the Coliseum immediately on arrival any time during the week of September 22. Badges, banquet tickets and particulars of the excursion to Madison will be furnished upon registration.

Mail will be received for members at T.A.P.P.I. registration booth, No. 237, Coliseum, Chicago.

For the trip to Madison, Wis., trains leave Chicago over the Chicago & Northwestern R.R. Thursday, September 25, at 5:30 and 8:30 p. m., and at 2:00 a. m., Friday. Single fare, \$4.21. Pullman ticket, \$1.62.

### GENERAL PROGRAM

#### Wednesday, September 24.

10:00 A. M.—Opening meeting in Officers' Board Room, First Regiment Armory, Michigan Boulevard and Sixteenth Street. Raymond S. Hatch, president, in the chair.

Address of welcome and response.

Reports of officers.

Committee reports and special papers.

The Principles and Practice Involved in Washing Unbleached Soda Pulp, by Martin L. Griffin, chairman of the Committee on Soda Pulp.

Discussion of the foregoing paper by George K. Spence, William H. Howell, Jr., George M. Trostel, O. Baehé-Wiig, P. Delin and others.

The Utilization of Waste Sulphite Lignin as Fuel, by Prof. Ralph H. McKee and George Barsky.

12:30 P. M.—Intermission for luncheon and a tour of the exposition.

3:30 P. M.—Adjourned sitting of the Association in Officers' Board Room, First Regiment Armory.

Reports by the following committees:

Abstracts of Literature—Ross Campbell, chairman.

Bibliography—Henry E. Surface, Chairman.

Heat, Light and Power—Edward P. Gleason, Chairman.

Paper Testing—Frederick C. Clark, Chairman of the firm.

Soda Pulp—Martin L. Griffin, Chairman.

Standard Methods of Testing Materials Used in the Manufacture of Paper—William H. Gesell, Chairman.

Sulphate Pulp—Olaf Baehé-Wiig, Chairman.

Sulphite Pulp—Herbert G. Spear, Chairman.

Vocational Education—George E. Williamson, Chairman.

1:30 P. M.—Dinner at the Union League Club.

#### Thursday, September 25

7:30 A. M. Assembly at T.A.P.P.I. Registration Booth, No. 237, in Coliseum, for technical session.

Discussion of Committee Reports and Special

1:00 P. M. Adjournment for visit to paper mill plant of Sears Roebuck & Co.; luncheon as guests of the firm.

2:00 P. M. Tour of inspection of the wall paper plant and other departments of papermaking interest of Sears, Roebuck & Co.

4:00 P. M. Continuation of technical session in Coliseum, or Armory. Papers and reports.

7:00 P. M. Coliseum Conference Room. Illustrated address by Dr. R. J. Blair, pathologist, Forest Products Laboratories of Canada, Montreal, on "Prevention of Decay in the Timber of the Roofs of Pulp and Paper Mills."

Discussion to be followed by a moving picture exhibit of the Sears, Roebuck Co. paper mill and other departments of interest.

8:15 P. M. Adjournment to Union League Club, Snoker and entertainment.

10:00 P. M.—Sleepers on train for Madison, Wis., may be occupied at Chicago & Northwestern R.R. depot, leaving at 2:00 A. M.

#### Friday, September 26.

The day will be spent in a visit of inspection to the Forest Products Laboratory of the Forest Service, U.S. Department of Agriculture, Madison, Wis. Train arrangements provide for members taking a late train from Chicago on Thursday evening and arriving in Madison early Friday morning, or leaving late in the afternoon so as to reach Madison shortly after 9 o'clock in the evening. Hotel accommodations at Park Hotel, Sleeping car in the train leaving Chicago at 2:00 A. M. on September 26 is ready for occupancy the previous evening at 10:00 o'clock; the train is due to arrive in Madison at 7:20 A. M., Friday. The departure from Madison will be made on Friday at 5:40 P. M., arriving in Chicago at 10:30 P. M. The first-class fare from Chicago to Madison is \$4.21, and sleeper berth \$1.62.

#### Saturday, September 26.

9:30 A. M.—Adjourned business sessions at Conference Room in Coliseum. Assembly at T.A.P.P.I. registration booth, No. 237.

The afternoon of Saturday will be devoted to an inspection of exhibits at the National Exposition of Chemical Industries.

### CANADIAN PRODUCTS POPULAR IN BRITAIN.

London, Sept. 13.—The Canadian pulp and paper industry has every reason to be well satisfied at the prospects of business in Great Britain is the opinion of A. L. Dawe, who was sent by the industry at the request of Lloyd Harris to assist in the expansion of trade with the Mother Country and secure additional shipping facilities.

Mr. Dawe stated that in a three months' canvas of the country he found a marked preference for Canadian pulp and paper products and large orders had already been placed which will be augmented as soon as shipping facilities permit.

Canadian pulps are highly regarded by paper makers and equal to and in many cases of better quality than the Scandinavian and German grades. Many Canadian manufacturers of pulp and paper are strongly represented in Great Britain by capable selling organizations fully alive to their opportunities.

Lee are accidents, fleas are a nuisance, bed-bugs are a disgrace, but flies are a householder's own fault.

Have you acquired the safety habit? If not, start now.

# PULP AND PAPER NEWS

D. A. Nicholson, of Chicago, sales manager of the Kimberly-Clark Co., Neenah, Wis., was in Toronto last week calling upon the trade.

C. Nelson Cain, sales manager of the Don Valley Paper Mills, Toronto, who was laid up for several days with illness, is able to resume his duties.

The regular quarterly meeting of the Provincial Paper Mills Co., Toronto, was held last week at which the usual quarterly dividend of one and three quarter per cent on the preferred and one per cent on the common stock of the company was declared.

Mr. Kirby, of Regina, Sask., representative of the John Martin Paper Co., of Winnipeg, spent a few days in Toronto and Montreal last week on business.

C. L. Voorhees, of the paper department of the Union Alliance Corporation, importers and exporters, New York, was in Toronto last week interviewing several firms in an endeavor to secure various grades of paper.

The Toronto Carton Club held its third quarterly luncheon outside of the city at London, on Tuesday, September 9. There was a good gathering, representative firms being present from Toronto, Guelph, Hamilton, Brantford, Stratford, Galt and Kitchener. The luncheon was given by the Somerville Paper Box Co., Limited, of London, at the Hunt Club and matters of general interest to the trade were discussed. C. R. Somerville, Mayor of London, formerly of the Somerville Paper Box Co., was among those who welcomed the visitors and delivered an address. Cars were provided after the luncheon by the Somerville Paper Box Co. and the guests driven around the city after they paid a visit to the Western Fair. The entire proceedings of the day were much enjoyed and it was decided that the next out-of-town luncheon of the Toronto Carton Club would be held early in December in Brantford.

A. R. Alloway, former assistant manager of the Canadian Press Association of Toronto and for the past two years business manager of the Stratford Herald, has been appointed editor of the Oshawa Reformer. It is the intention to change the Reformer from a weekly to a semi-weekly paper.

James Thompson, M.L.A. of Havelock, Ont., president of the Monteith Pulp and Timber Co. of Toronto, has been nominated as the candidate of the Conservative party in East Peterboro at the forthcoming Provincial elections. Mr. Thompson has represented that constituency in the Legislature since 1908.

L. R. Wright, editor of the Canadian Woodworker, Toronto, has joined the ranks of the beneficiaries. He was married last week to Miss Dora Louise Clarke, younger daughter of Captain and Mrs. W. T. Clarke, of Toronto.

E. S. Crabtree, manager of the Camden Paper Mills, Camden East, Ont., is now looking after the sales of the product of the plant. The Hodges-Sheriff Paper Co., of Toronto, have until recently been selling agents.

The Toronto Times, formerly the Toronto News, has suspended publication, and an order to wind up the paper has been granted by the courts. The nominal

capital is \$500,000, divided into 5,000 shares of \$100 each, said to be subscribed and of which 2,230 are fully paid up. The reason given by the directors for the suspension of the paper is the enormous increase in the cost of production. It was thought that the United Farmers of Ontario, who have been talking of issuing a daily, might on the present occasion find the desired opportunity of acquiring one, but the project is not looked upon with favor by the officers of the U.F.O. At a recent meeting of the executive it was decided to change the Farmers Sun, Toronto, which is the official organ, from a weekly into a semi-weekly and later increase publication to three times a week or daily when the situation warrants it.

H. E. Rice, editor of the Huntsville Forester, has been nominated by the Liberals as their candidate in the Muskoka district at the forthcoming provincial election in Ontario. Mr. Rice has been identified with the Forester for over twenty years and has been president of the Huntsville Board of Trade for four years.

The sixty-first annual meeting of the Canadian Press Association, which was to have been held in Toronto in June last but was postponed owing to the industrial unrest prevailing at that time, will take place in Toronto on November 27 and 28 at the King Edward Hotel.

A. P. Costigane, safety engineer and secretary of the Ontario Pulp and Paper Makers' Association, has been invited to be present at the sixth annual meeting of the International Association of Industrial Accident Boards and Commissions, which will be held in Toronto September 23-26. Mr. Costigane, who is chairman of the pulp and paper division of the National Safety Council, will also attend the annual gathering of the N.S.C., which will be held in Cleveland, Ohio, October 1-4.

The thirty-sixth annual assembly of the Sovereign Great Priory of Canada, Knights Templar, was held in St. John, N.B., this week. O. P. McGregor of the O. P. McGregor Paper Co. and C. F. Mansell, sales manager of the Toronto Paper Mfg. Co., past grand registrar and grand treasurer, respectively, were not able to attend this year owing to pressure of business at home.

Mr. Walter Norton, who was in the shipping department of the Beveridge Paper Co., Montreal, when the war broke out, immediately enlisted and went over with the first contingent. He is back on his old job and his friends are congratulating him on the receipt last week from the War Office of the Military Medal, awarded for bravery on the field. Three other members of the Beveridge staff were also with the colors. The company are enjoying their new offices at 628-630 St. Paul street west.

Mr. G. D. Jenssen and S. Berger of G. D. Jenssen & Co., New York, were in Montreal this week. Mr. Jenssen says they are busy with contracts for acid systems and also that the new pulp mill to be erected in Newfoundland by Norwegian capital will go forward in the spring.



# The Markets

## CANADIAN TRADE CONDITIONS

Toronto, Sept. 15. The shortage of newsprint is becoming a serious proposition and as each week goes by many inquiries are being received. It is said that a number of United States publishers have, owing to recent increases in circulation and advertising, exceeded the contract allowance of the mills and have been entering the open market in Canada for spot deliveries, which has resulted in boosting the prices in some instances to as high as 5½ per cent.

One situation that is causing some anxiety is the probable car shortage. Some complaints have been received from the east, and that they should be heard so early in the season is an unfavorable omen. In the dead of winter many kicks have been aired from time to time and it is now declared that there are nearly 200,000 Canadian owned cars in the United States. The United States Railway administration has orders to supply the Canadian roads with over 400 freight cars a day but, on investigation it is found that not more than 50 cars have been coming in on the average. Some relief is promised in the near future and manufacturers are looking forward to an early improvement in the situation as a result of the question being ventilated in Parliament.

That all lines of business in the paper making arena are moving forward with a steady demand and firm prices is the general verdict. Some mills are a long way behind in their orders and one sales manager remarked this week that he thought he detected a slight slackening in speed so far as the buyers are concerned. This was, indeed, welcome news owing to the fact that if the rush kept up there would be no catching up with the business at all this fall. There is every indication that all prices will hold good during the autumn months. The demand for kraft has been particularly active.

Paper box factories are being rushed to the limit and are only restricted in their output by space limits and lack of help. Some of the smaller concerns are thinking of extending their premises in order to keep pace with the added demand for their product. There is practically no box board coming in from the United States, due to the high prices and prevailing duty,

while American mills have all that they can possibly look after in the way of business. Canadian plants are running several weeks behind but are doing their best under very trying circumstances to catch up with requisitions.

The main topic of conversation during the past week has been the ascendancy of pulp and paper securities on the stock market. Prices have been set at a new high level—in fact, the offerings have jumped so rapidly that it savours of the spectacular.

Book and writing mills are particularly well employed and present prices are likely to hold for some time. There is more business being offered by large consumers of these classes of papers than there has been in many weeks.

Sulphite pulp is holding particularly strong and the majority of mills are now sold up for a considerable period. As high as \$120 per ton is being asked at some of the plants for bleached sulphite, while groundwood pulp is strong and in active demand. There is also a pretty fair market for pulpwood and an operator, who recently returned from a tour in Northern Ontario, states that the settlers are taking out more wood this season than they have for years past. It is felt that now that the war is over and everything is getting back on a normal basis there should be a splendid opening for pulpwood sales. The export paper trade is receiving some attention and it is believed, as a result of the visit of Mr. Dawe to England that the way has been permanently and effectively opened up for a greatly extended overseas trade in all kinds of paper. The feeling of the Mother Country is especially cordial to products from the Dominion and it is felt that Canada has really little to fear from Scandinavian or German competition. With improved carrying facilities and lower ocean freight rates the Canadian mills will be in a position to take care of all the business that comes their way. It has been stated that some mills have not been living up to the foreign commitments and that they have promised to supply certain tonnage and have not been able to do so. This practice is being condemned by those who desire to play fair with all interests at home and abroad and if obligations are lightly regarded a "black eye" will be dealt the in-

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES <sup>8311</sup> 8312 MURRAY HILL,  
<sup>8313</sup>

NEW YORK

Write us when you  
have any surplus  
of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

dustry as a whole and just at a time when every indication points to the pulp and paper being the most rapidly developing one in Canada.

Jobbers report that the past month business has been exceptionally good. Buying has been going on freely in all lines and out of half a dozen representative establishments which were interviewed, not one of them had any complaints to make regarding the way things were moving. It is confidently expected that the turnover this fall will be greater in every line than any year since the outbreak of the war.

Toilet and tissue mills are much in arrears in filling orders and wax paper plants are rushed. One manufacturer making sulphite paper for waxing purposes reports that he is fully one hundred tons behind in deliveries.

In the rag and paper market white blanks are in good demand and there have been some calls for print manilas as the cheaper grades are moving as usual. The requisitions for new cotton rags continue with prices holding up well. Roofing mills seem to have gone out of the market and quotations are a little weaker.

The prices on bleached white glassine have been withdrawn and there has been a change in the discount in the figures for kraft paper bags from 27½ and 10 per cent to 37½ and 10 per cent.

**Pulp Prices.**

	F.O.B. Mill.
Groundwood pulp . . . . .	\$30.00 to \$32.00
Sulphite, news grade . . . . .	\$70.00 to \$75.00
Sulphite, easy bleaching . . . . .	\$90.00
Sulphite, bleached . . . . .	\$115.00 to \$120.00
Sulphate . . . . .	\$87.50 to \$90.00

**Rag and Paper Stock Prices.**

	F.O.B. Toronto
No. 1 white envelope cuttings . . . . .	\$4.75
No. 1 soft white shavings . . . . .	\$4.25
White Blanks . . . . .	\$1.55
Heavy Ledger Stock . . . . .	\$2.65
No. 1 magazine . . . . .	\$2.45
No. 1 book stock . . . . .	\$1.85
No. 1 manilas . . . . .	\$2.40
No. 1 print manila . . . . .	\$1.55
Folded news . . . . .	\$1.10
Over issue, news . . . . .	.95c
Kraft . . . . .	\$3.25
No. 1 clean mixed papers . . . . .	.90c
No. 1 shirt cuttings . . . . .	15-15½c
No. 1 unbleached cotton cuttings . . . . .	13-13½c
No. 1 fancy shirt cuttings . . . . .	10-11c
No. 1 blue overall cuttings . . . . .	.10c
Bleached shoe clip . . . . .	.13c
White cotton hosiery cuttings . . . . .	13½c
Light colored hosiery cuttings . . . . .	.11c
New light flannellette cuttings . . . . .	10½c
No. 2 white shirt cuttings . . . . .	.11c
City thirds and blues (repacked), No. 1 . . . . .	.41½c
Flock and satinettes . . . . .	\$3.00
Tailor rags . . . . .	\$3.25
Gunny bagging . . . . .	33-4c
Manila Rope . . . . .	51-53½c

**NEW YORK MARKETS.**

New York, September 13.—Firmness continues to be the outstanding characteristic of the paper market, and trade activity shows no let up in any quarter. Consumers and jobbers in general are placing orders with exceptional frequency and for large lots of paper

of all kinds, and mills in the great majority of cases are so far behind in making deliveries that they are repeatedly being compelled to turn down business, not being willing to contract further ahead with present conditions surrounding raw material and labor so uncertain.

The greatest strength in the market is still shown in newsprint. Demand for this kind of paper is unprecedentedly active, and most manufacturers report that they have given up trying to satisfy all their customers. Practically no spot lots of news are being offered and such supplies as are found available from time to time are being disposed of by mills direct to consumers, which means that dealers are finding it practically impossible to secure any newsprint at all. Roll news is selling at 5.25 to 5.50 cents a pound in the open market, and rumours are heard of some buyers paying even more. In view of the tight condition of supplies, almost any price seems possible, for it is now not a question of price to publishers in their efforts to cover their wants.

Book papers also are moving in large volume and at very firm prices. Manufacturers are pressed for supplies by consumers, who seem willing to meet any reasonable price to obtain deliveries. When it is considered that virtually every periodical publication in the country is now printing larger issues than ever before and that the great volume of advertising most of them are being favored with necessitates their constantly enlarging their number of pages, the voluminous and urgent demand for book paper is easily explained.

Fine papers are gradually moving upward in price and mills are making shipments as rapidly as their product becomes available for delivery. Wrapping papers are daily growing more active. With merchants the country over making preparations for a record breaking pre-holiday business, they are laying in large stocks of wrapping paper as well as tissue, and this situation is reflected in the steadily expanding call for these kinds of paper.

Boards are quotably firm through the strike of paper box makers in New York, and vicinity, which has not yet been settled, is a more less quieting factor, it being reported that mills have had some orders cancelled. The majority of mills, however, are still from four to six weeks behind in deliveries, and the probabilities are that as soon as the local labor situation in the paper box trade clears, consumers of board will resume buying on an even more greater scale than prior to the strike, which is likely to send prices up to higher levels than now prevail.

GROUND WOOD.—Not in a long time has the market for mechanically ground wood been in such a strong position as it is now. Offerings of spot lots have practically disappeared, as producers have contracted for their output for some weeks ahead and have little or no pulp to divert to the open market. Buyers consequently are experiencing increasing difficulty in covering their requirements and are bidding high prices to secure pulp, reports being heard of sales at as much as \$40 per ton at the grinding mills. The activity among newsprint mills is of course accountable for the present situation in ground wood, and with the fall coming on when water conditions are usually unfavorable for grinders, indications point to supplies becoming even more pinched than they are now. Quotations on spruce ground wood range from \$33 all the way to \$40, it being a question just what definite market values really are.

**CHEMICAL PULP.** The situation in chemical wood pulp remains strong and buyers continue to operate actively, offerings being absorbed about as quickly as they are made. Prices are undergoing a hardening process, and while no broad changes have occurred this week, the tendency is firmly upward, and predictions are made that later in the season when supplies from the Scandinavian countries are automatically cut off by the closing of the Baltic, demand here will be found to so far out-distance available supplies that values will climb to record-breaking heights. Doubtless it is this outlook that prompts many manufacturers in the States and in Canada to refuse to sell any further ahead, unless the buyer is willing to leave the matter of price an open question until the time of delivery. Bleached sulphite of domestic and No. 1 quality is freely selling at 6 to 6.25 cents a pound and buyers are finding it necessary to go to producers and use all of their powers of persuasion to secure supplies. Newsprint sulphite is readily bringing up to \$75 a ton at the pulp mill and the market seems firmly established at this price, with prices tending toward new high levels. Soda pulp also is a strong item in the current trade and spot lots are realizing 4.75 to 5 cents a pound in sales. Kraft is in active demand and is moving in increasing amounts at a price basis of around \$90 a ton.

**RAGS.**—On the whole, demand for papermaking rags rules comparatively quiet. Writing paper mills are making some few purchases but it is apparent they are confining their buying to material directly needed, while roofing felt manufacturers are not absorbing the tonnages of rags that they recently have, the influx of foreign stock evidently putting them in a more independent position in regard to domestic rags. The chief demand this week has been for No. 1 packing of old white rags, and sales of this variety of rags of repacked quality have been frequently reported at between 7.50 and 7.75 cents a pound at the shipping point, with some dealers saying they have obtained as high as 8 cents. Thirds and blues are in about the same position quotably, prices ranging from 4.25 to 4.50 cents for repacked blues, and around 3.50 cents for miscellaneous packing. New cuttings are generally quiet, with inquiry mainly for black rags. Shirt cuttings are for the moment neglected, but prices are maintained at a basis of 15.50 to 16 cents for No. 1 white shirt cuttings.

**PAPER STOCK**—Demand for old paper has eased up to a notable degree during the past several days, and the quietness and partial easiness apparent in the market is in direct contrast to the activity and sharp upward trend of values prevailing in recent weeks. Board mills, evidently experiencing a slower demand for their own product as a result of the strike of paper boxes workers in New York, have been generally out of the market, as buyers excepting for occasional lots needed to augment their stocks, and prices on folded news, mixed paper and other of the low quality grades have sagged to an extent. Flat folded news is now freely offered at around 95 cents per 100 pounds f.o.b. New York, and No. 1 mixed paper at 80 cents, whereas a fortnight ago these two basic grades were easily commanding \$2 to \$3 per ton in excess of these figures. Shavings are in less demand and quotations are lower. No. 1 soft white shavings are available in good quantity at 4.25 cents per pound New York, and hard whites of No. 1 quality at 5.25 cents. Books and magazines, which up to the begin-

ning of this week, were in active movement, are now difficult to sell, most consuming mills having retired as buyers, at least temporarily. About 2.60 cents is the price generally asked for heavy flat stock and indications are purchases could be effected at cheaper levels.

**BAGGING AND ROPE.** Old Manila rope is quotably firm and is finding a ready market among paper mills at a price range of 6.25 to 6.50 cents a pound f.o.b. New York. Foreign rope is still coming in in fairly large quantity, yet mills presumably are using such sizable amounts that dealers say they are occasioned no trouble in disposing of all the supply they have to offer. Bagging is rather quiet and is offered freely at 3 cents New York for No. 1 scrap. Gunny is moving in a regular manner at around 3.75 cents f. o. b. shipping point and ex dock.

### POINTERS ON EXPORT TRADING.

Some, if not all, of the Canadian companies exporting pulp and paper are endeavoring to send their products away properly packed. A great deal of attention has lately been paid to this subject. Its importance is evident on the slightest consideration of the matter. As the Montreal Gazette says, in regard to this and other phases of doing a successful foreign business:—The statement that continued Canadian prosperity depends to a great degree upon an enlarged export trade ought not to require repetition. The thing has been said so often and with so much emphasis that the lesson, it may be assumed, has been learned. The Government has been at some pains to discover and develop, by means of trade missions and by the establishment of credits, markets for Canadian products in foreign countries. Canadian industries and financial institutions have, collectively or independently, engaged in the same campaign, and, to some extent, these efforts have been fruitful. That is good as far as it goes, and it goes far, but if any but temporary benefits are to accrue to the country from these efforts, new trade must be developed upon a reasonable permanent basis, and this cannot be done unless the exporting industries of Canada look to the character of the service that they give.

The competition is going to be exceptionally keen, so keen that only the fittest will survive, and it is essential that Canadian industries enter the race properly equipped in every respect. The Government may find markets, but it cannot keep them; the industries themselves must do that.

Careless trading will not continue in the commercial struggle which lies ahead, and careless trading is what the industries of Canada must avoid. In this connection some interesting things are said in a supplement to the August circular of the Canadian Bank of Commerce. Officials of this bank recently completed a tour of New Zealand, Australia, China and Japan, having studied the opportunities of trade development between Canada and each of the countries named. The report which they make is that each of these countries offers a market for Canadian products, but Canadian manufacturers, to secure the advantages thus offered, should send competent representatives to these markets for the purpose of studying local requirements, advertising their wares, and select local representatives. The stamp "Made in Canada," it is added, ought to be a guarantee of quality in respect of both materials and



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workmanship, because "it is only by producing a superior article that we can hope to make rapid progress in our foreign trade."

That Canadian exporters have not always lived up to a high standard of service, and that trade has suffered from carelessness in shipping and from negligence in correspondence, is stated in this report, which calls attention to the harm which the commercial reputation of the country sustains through such derelictions. It was found that Canadian firms would be welcomed in the countries visited. "A great many complaints, however, were made about Canadian carelessness in handling foreign business, and some of the instances related were so glaring that we are recording a few of them in the hope that it will bring home to exporters the necessity for greater care in future." Instances are accordingly given, the most numerous having reference to poor packing and lack of attention to correspondence. Some of the criticisms adds the report, were very severe. Those reflecting upon the quality of the goods sold were relatively few. That being so, it is doubly unfortunate that when Canada has first-rate products to sell, the chance of selling them should be lost or reduced through careless shipping and office neglect. The point is not by any means an unimportant one, because, as stated in the report referred to, if a few shippers are careless it reflects upon the whole foreign trade of the country. The difficulty is not one which cannot be overcome, and it should not be permitted to hamper a trade extension which is of vital consequence to Canada.

The Wise Old Owl of "The Mill" says:

If you keep your mouth shut you will never put your foot in it.

**STRIKING AGAINST STRIKERS.**

Let a physician, say, refuse to attend a sick railroad man or any member of his family, or a druggist refuse to sell medicine to a railroad man in whose family there is sickness, and what a howl would go up against such heartlessness and callousness toward suffering. But let the comfort, convenience, safety, even the lives of hundred of thousands of men, women or children depend on uninterrupted or unimpaired train service, and how much consideration does it receive at the hands of striking railroad men? One hates to believe that the sentiment expressed by the striking Chicago trolley men who, when urged by one of their leaders to consider the needs of the public, shouted, "To hell with the public! the public be damned!" really voices the attitude of the railroad employees toward their fellowmen. But if it does, if utter disregard for public rights and public safety has become a fixed principle with the railroad men, the public may be trusted to find a way to deal with the situation. No single body of men, no one class of employees, no trades organization in this country is sufficient unto itself, nor in a position to set up and maintain its own code of morals in defiance of the needs or rights of others. The safety, the prosperity, the very existence of the nation depend on a single standard of laws and morals and the mutual good-will of all classes. When these are disregarded by a considerable body of men the foundation of our government is imperiled and our free institutions threatened with extinction.—Springfield Union.

It takes a mighty sick boy to stay in bed when there is no school.

<hr style="border: 1px solid black; margin-bottom: 10px;"/> <p>New York San Francisco Chicago New Orleans Tokyo Kobe Havana Lima Valparaiso Caracas Kingston</p> <hr style="border: 1px solid black; margin-top: 10px;"/>	<h2 style="margin: 0;">GRACE &amp; CO., LIMITED</h2> <h3 style="margin: 0;">MONTREAL, QUE.</h3> <p style="margin: 5px 0;"><b>EXPORTERS &amp; IMPORTERS.</b></p> <p style="margin: 5px 0;"><b>BLEACHED — EASY BLEACHING — UN- BLEACHED PULP — KRAFT PULP — GROUND WOOD PULP</b></p> <p style="margin: 5px 0;"><b>KRAFT WRAPPING — SULPHITE WRAP- PING — MANILAS — FIBRES — BOX- BOARDS.</b></p> <p style="margin: 5px 0;"><b>NEWSPRINT — WRITINGS — BONDS — LEDGERS — OFFSETS — COATED BOOK &amp; BOARD.</b></p> <p style="margin: 5px 0;"><b>GLASSINE — GREASEPROOF — VEGE- TABLE PARCHMENT AND SPECIAL- TIES.</b></p> <p style="margin: 5px 0;"><b>CORRESPONDENCE SOLICITED.</b></p>	<hr style="border: 1px solid black; margin-bottom: 10px;"/> <p>London Liverpool Paris Genoa Barcelona Calcutta Colombo Shanghai Rio de Janeiro Santos Buenos Aires Batavia Singapore Petrograd</p> <p style="margin: 10px 0;"><b>Representatives.</b></p> <p>South Africa New Zealand Australia</p> <hr style="border: 1px solid black; margin-top: 10px;"/>
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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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# EDITORIAL

## A NATION'S JOB.

It is reasonably safe to say that the Victory Loan 1919 will be the last big military loan that Canada should ever have to float. There should be no difficulty in raising far more than the objective. Patriotism and common sense dictate the advisability of investing to the limit. No doubt many Americans will buy these bonds because of the very favorable rate of exchange. This issue will be practically the only security handled in Canada while the drive is on. Now is the time to prepare for the plunge.

## THE IMPERIAL FORESTRY CONFERENCE.

An event of the greatest importance to the Empire will be the Imperial Forestry Conference which has been summoned by the British Government to meet in London next December or January at the same time as the Empire Timber Exhibit. The idea of such a conference was suggested by Robson Black, Secretary of Canadian Forestry Association and has been eagerly taken up by the forestry leaders and Sir John Stirling-Maxwell has summoned representatives from all parts of the Empire.

The conference will consider the forest conservation situation of other Dominions as well as the British Isles and it is probable that a British Empire Forestry Association will be formed. The opportunities for such an association to collect information relative to forestry problems and practices and to promote inter-imperial trade in forest products, are evident from a moment's consideration of the dependence of some parts of the Empire on timber imported from other parts or from foreign countries. Enormous quantities of spruce, pine, fir, hemlock and similar woods are imported by England and Australia from Canada, while it is possible for Australia and India to supply other kinds of timber for export as well as for home use. It is possible to increase by proper forestry measures the home production in the various dominions of a large percentage of the timber used, but the fact that this cannot be accomplished at once, nor in some cases even in a large measure, makes all the more important such a meeting as will make possible a more complete understanding of the entire forestry situation in each part of the Empire.

An Empire Forestry Association would have been of incalculable value during the period of reconstruction and expansion upon which we have just entered.

## THE OTHER SIDE OF THE ROAD.

The Fortnightly Review states that the Economic foundations of Great Britain are rapidly being undermined by the efficiency of highly paid American labor and the growing ability of low-wage Japanese labor. It contends that British labor will learn the necessity of intensive production and thrift only through experience of hard times.

And so we have the curious situation of the Englishman telling his countrymen to settle down to business like the Americans or there is no hope for continued prosperity, while the American frequently points to his English cousin as learning the lesson of the moment and getting busy. It is the same old story: the other side of the street appears better walking. The fact of the matter is that a lot of people are without things they need because a lot of people are not employed making things that are needed, these things costing more largely because not enough are made and because so many people are not employed making them that they can't afford to buy them. That is perfectly clear, is it not? No, it is not, but we shall all have to get busy and produce something or the answer will never be found.

## OILING THE WHEELS OF INDUSTRY.

Did you ever see a reciprocating engine whose shaft travelled only in one direction? It certainly would be of little service. There have been some indications of late that a certain element has entirely overlooked the fact that the social and economic progress of the nation and the world is largely a matter of reciprocal action. It means that the driving force must act both ways. The steam of ambition and ability must flow through both the port of employer and the port of employee, so as to act on both sides of the piston of progress. The wheels of industry can not continue to turn unless both ports are kept open.

We may liken the cylinder to the nation's business. The whole structure is based on the contributions of employers and employees. There are some non-contributors—"dead-heads"—but they are comparatively few and need be considered only incidentally.

The main problem today is to make sure there is no interruption to the flow of power through both ports of the nation's engine. Only so can our industries keep going. How the matter is to be adjusted no one knows, but it is a hopeful sign that the big conference at Ottawa last week has found some common ground and lines of effort common to labor, capital and the public. The idea that either employer or worker can shut off his

contribution to the power supply is as wrong from an industrial as from an engineering point of view. For smooth running we need a maximum effort on each side of the piston. It is when each is contributing the maximum that the whole social mechanism runs smoothly and results are accomplished.

Apparently there has come from the Ottawa conference some realization that the input of a machine is fully as important as the output and that there is no use discussing the division of the latter until it is provided for by the former. Another axiom is that the larger the input the larger the output, providing losses and wastes are minimized. This is a long step in the direction of getting enough goods for everybody and eventually a fair price on them. Delegates to the Conference have seen the necessity for concessions on both sides. This is the only salvation for the general public.

What is needed is a sense of responsibility on the part of both employer and employee to keep the engine going. It can't be done if either quits. It is up to each to work at his full pressure and it is the duty of the leaders of each group to keep the wheels well oiled.

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#### COBWEBS.

We noticed in a newspaper a recipe for making solid chocolate cake. It is unkind, to say the least, to tell them how to make a solid cake.

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Montreal is to have a fire prevention week next month. The ounce of prevention in this respect is worth far more than its weight in gold. It is the cheapest form of insurance.

---

Sweden will have to sell a lot of pulp in the U.S.A. to pay \$25 ocean freight on coal in addition to the price at sea-board. And this demand for 5,000,000 tons annually will not help fuel conditions in Canada very much. Those peat digging and briquetting machines are not being started any too soon.

---

The pulp and paper industry was represented at the Industrial Conference. F. A. Sablaton, of Laurentide, and P. B. Wilson, of Spanish River, represented employers, while James Lockwood, International Brotherhood of Papermakers, Sault Ste. Marie and Maurice Labelle, International Brotherhood of Pulp, Sulphite and Paper Mill Workers, represented employees in this industry. T. L. Crossley of Toronto, chairman of the Committee on Education for the Technical Section was in attendance as a member of the third group, representing the Society of Chemical Industry. There has always been a lot of brotherhood in this industry as between men and management. No doubt there will be a lot more.

Cheese factories in Ontario are in difficulties over the drop in prices. Much of the milk that was made into cheese is now going, or will soon go, to condenseries. When the price of casein went up so suddenly a while ago, the reason given was the demand from cheese factories because of the high prices available for food product. Paper coaters will look with interest for a reversion of prices on casein if the cost of cheese remains low.

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#### A NEW CANADIAN PAPER JOURNAL.

An advertisement appeared this week stating that a new weekly journal of the pulp and paper industry would be published in Montreal in the near future. Our welcome awaits the newcomer.

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#### APPROVES FORESTRY CAUCUS.

The following letter from Philip T. Coolidge, Forester, of Bangor, Me., came from Bishop's Falls, Nfld. Our ideas do not always get such hearty approval. Further comment, of either kind, will be appreciated. Mr. Coolidge writes:—

Your editorial "A Forestry Caucus" in the issue of August 28 has greatly interested me and I shall hope to see plans for the caucus carried out. I am tempted to express my satisfaction in your discussion of the matter of fire protection. Good progress has been made in this work, but the obvious condition remains wherever one goes in the woods that further steps are necessary. Without adequate fire protection, other measures to assure the continuance of our forest wealth are useless. With it, many of the more advanced measures, such as would secure reproduction of timber species, protect soils from erosion, and the like, would be practically accomplished in many types of forest.

I think that plans for the sound protection and management of our northern forests, worked out in a spirit of co-operation, would well repay the necessary effort. I hope that less important matters which might come before such a general caucus could be arranged, perhaps by the committee which you suggest as a preliminary, so that public attention would not be too greatly distracted by them and would be focussed on the main issue in forestry at this period, namely fire protection. I should also hope that the caucus would not be merely educational, but that a working organization to secure results could be arranged.

You are doubtless aware how well the National Conservation Congress held at Washington in November, 1913 was organized, and I think that useful pointers might be secured from a consideration of the organization and history of that Congress. Although it may be preferable that the caucus be strictly Canadian, I will also suggest that a few men, such as Forest Commissioner F. H. Colby of Maine and C. R. Pettis and W. G. Howard of the New York Conservation Commission have had experience in fire protective work which might give their presence at the caucus particular value.

# Pulping Quality of American Woods\*

By Otto Kress, Sidney D. Wells and Vance P. Edwards

Forest Products Laboratory, Madison, Wis.

In the Pulp and Paper Magazine for May 9th, and 16th, 1918, there appeared an article by Messrs. Lee and Hovey, of the Canadian Forest Products' Laboratories, on the principal physical and chemical properties of the woods ordinarily used for the manufacture of pulp.

The Forest Products Laboratories at Madison, Wis., which are a part of the United States Forest Service, have made an extensive investigation into the quality of pulp, ease of cooking, etc., for practically all available American woods. The value of having such information is quite evident to those in the industry who frequently find it advisable to include more or less of odd species in their regular logging operations. A knowledge of the probable behavior of such wood in the pulp mill will be of service. Such an indication is furnished by the article which follows and which will be available in the form of reprints a little later on.

The Forest Products Laboratory, Madison, Wis., has in the past received frequent requests as to the suitability of various woods for pulp and paper production and it has therefore, seemed advisable to prepare for publication some of the available data on this subject. The laboratory has carried on an extended investigation over a period of more than ten years and has collected experimental pulping data on practically all the possible species of American pulp woods. These data, in so far as the chemical pulps are concerned, have mainly been obtained from experimental cooks made at the Forest Products Laboratory, Madison, Wis., in 100-pound semi-commercial digesters and from studies made on the resulting pulps. It has been found, however, that the general cooking conditions, yield, bleach consumption, etc., as determined by experimental trials for pulp made from any given wood, compare quite favorably with the results obtained in commercial practice. The data for the various mechanical pulps were obtained from the experiments carried on at the groundwood laboratory, Wausau, Wis., where a commercial-sized grinder equipment was installed by the Forest Products Laboratory in co-operation with the American Paper and Pulp Association.

The yield of pulp from any given wood depends directly upon the specific gravity of the wood or weight per cubic foot, and the pulping method employed. By varying the severity of the pulping treatment both yield and bleach consumption are changed. For example, white spruce sulphite pulp prepared for the manufacture of newsprint paper, would show an entirely different yield and bleach consumption from

bleached white spruce pulp prepared for use in a white bond paper. It is, therefore, evident that the character and use of the pulp will largely decide the severity of the cooking operation. Certain woods, such as western larch, containing a high percentage of galactan, which is water-soluble, will show a decreased yield by either mechanical or chemical pulping.

Pulping data have been given for woods such as red and white oak, white ash and certain other woods not because we consider these species suitable for pulp purposes, but because the information was available. Many wood-using plants produce considerable tonnage of slabs and mill waste of woods not especially suitable for pulp production, and are interested in a possible outlet for this waste. In some cases, at their direct request pulping trials have been made on woods known to be unsuitable for pulping purposes. The various woods have been listed, giving the official name as recognized by the Forest Service, also the common names in use and the range covering the growth of that particular species. This information has been taken directly from the "Check List of the Forest Trees of the United States," by George B. Sudworth.

In considering the pulping and other data given for the various woods, attention is drawn to the following points:

1. The weights of wood given are for bone-dry material per solid cubic foot. This is obtained by multiplying the specific gravity of the over-dried wood based on the green volume by 62.3 lbs. the weight of a cubic foot of water).

2. The fiber lengths as given are the average of all the available data taken from the Forest Service investigations and from other sources. Many of the measurements given are the results of averages of thousands of determinations; in other cases from only a few determinations.

3. The yield figures represent the yield of bone dry screened and unbleached pulp per hundred cubic feet of solid bone-dry wood. It is our opinion that in general the ordinary cord of 128 cubic feet of rossed wood piled 4 ft x 4 ft x 8 ft closely approximates 100 solid cubic feet of wood. To convert the yield on bone-dry basis to air-dry pulp containing 10 per cent moisture divide the yield by 0.9.

The yield data are based on results obtained from experimental runs made under very favorable conditions. The pulp logs on arrival at the laboratory are barked, sawed into convenient size and any wood containing knots and decayed spots is rejected. The chips are carefully sorted and are far more uniform in size and moisture content than can be obtained in commercial practice unless the mills operate under more favorable conditions than ordinarily exist. Further, each cook representing an individual experiment, it is possible to press, shred, sample and screen the pulp with fewer mechanical losses than is feasible in handling the pulp in commercial practice from the blow pit to the wet machine or to the finished paper.

4. The comparison of the character and uses of the various pulps that may be obtained from the different woods offers certain difficulties. It has, therefore,

\* Much of the data used in this report has been collected at a previous date by Henry E. Surface of our laboratory, but not for publication. We also wish to acknowledge the contributions of J. H. Thiekens, Edwin Sutermeister, R. C. Cooper, G. C. McNaughton, C. K. Textor and S. E. Lumaek, who, while in the employ of the Forest Service, made some of these cooks.

<sup>1</sup> In charge, Section of Pulp and Paper.

<sup>2</sup> Engineer in Forest Products.

<sup>3</sup> Engineer in Forest Products.

been decided to consider white spruce as the standard wood for pulping by the sulphite, sulphate and mechanical processes and to compare the pulp that might be obtained from any given wood by this process of pulping with the pulp obtained from white spruce. Aspen wood has likewise been adopted as the standard for reduction by the soda process, and soda pulps from other woods will be compared with it.

No figures have been given on the bleaching of the sulphate pulps as we do not know of any mills making bleached sulphate pulp in this country at the present time. By this we do not mean to imply that sulphate pulp cannot be economically bleached, but this is not the present mill practice.

Further, no data are given on the possible soda pulping of the various firs, pines, hemlocks, larch, tamarack and other woods that can be reduced by the sulphate process. The laboratory has made extensive pulping trials on the reduction of these woods by the soda process and it is, of course, recognized that this process can be and is at present employed to a limited extent for reduction of certain of these woods. In general, the soda process can be used for reduction of any wood suitable for the production of sulphate pulp, where the stock is not to be bleached and where strength is of primary consideration. These soda pulps from coniferous woods could, of course, through a severe pulping treatment, be bleached with a reasonable bleach consumption.

No figures have been given for bleach consumption. It has appeared advisable to compare the ease of bleaching for any given pulp with the standard white spruce sulphite and aspen soda pulp.

The data given must, of course, be interpreted with the understanding that the figures and results are based on experimental pulping trials. We believe that it may be of interest if used with this reservation for comparing the character and yields of pulps that may be expected from different woods.

**BLACK SPRUCE**—*Picea mariana*. Wt. 23 lb. Fibre 2.6 m.m.

*Range*—Newfoundland to Hudson Bay and northward to the Mackenzie river; southward in Michigan, Wisconsin, Minnesota, and in the eastern mountains to North Carolina and Tennessee.

*Common Names*—Black spruce (N. H., Vt., Mass., R. I., N.Y., Pa., W. Va., N.C., S.C., Wis., Mich., Minn., Ont., Eng.); Double Spruce (Me., Vt., Minn.); Blue Spruce (Wis.); Spruce (Vt.); White Spruce (W. Va.); Yew Pine (W. Va.); Juniper (N.C.); Spruce Pine (E. Va., Pa.); He Balsam (Del., N.C.); Epinette-Janne (Quebec); Water Spruce (Canada, Me.).

*Sulphite Pulp*

Yield 1,050 lb. Easily bleached.  
Easily pulped—Excellent strength and color.  
*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,150 lb.  
*Character and Uses*—Similar to white spruce.

**BLUE SPRUCE**—*Picea parryana*. Wt. 23 lb. Fibre 2.8 m.m.

*Range*—Central Rocky Mountain region—Colorado, Utah and Wyoming.

*Common Names*—Parry's Spruce (Utah); Blue Spruce (Colo.); Spruce Balsam (Colo., Utah); White Spruce (Colo., Utah); Silver Spruce

(Colo.); Colorado Blue Spruce (Colo.); Prickly Spruce (lit.).

*Sulphite Pulp*

Yield 1,050 lb. Easily bleached.  
Easily pulped. Excellent strength and color.  
*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,150 lb.  
*Character and Uses*—Similar to white spruce.

**ENGLEMANN SPRUCE**—*Picea engelmanni*. Wt. 21 lb. Fibre 3 m.m.

*Range*—Northern Arizona and through the Rocky Mountain region to British Columbia.

*Common Names*—Englemann's Spruce (Utah); Balsam (Utah); White Spruce (Oreg., Colo., Utah, Idaho); White Pine (Idaho); Mountain Spruce (Mont.); Arizona Spruce (Cal. lit.).

*Sulphite Pulp*

Yield 990 lb. Easily bleached.  
A little hard to pulp—excellent strength. Excellent color.

*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,000 lb.  
*Character and Possible Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 2,400 lb.  
*Character*—Strong fibre of good color.  
*Possible Uses*—Same as white spruce.

**RED SPRUCE**—*Picea rubens*. Wt. 24 lb. Fibre 3.7 m.m.

*Range*—Nova Scotia to North Carolina and Tennessee. Range imperfectly known.

*Common Names*—Red Spruce; Yellow Spruce (N. Y.); North American Red Spruce (foreign lit.)

*Sulphite Pulp*

Yield 1,080 lb. Easily bleached.  
Easily pulped—Good strength—excellent color.  
*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,150 lb.  
*Character*—Highgrade strong fibre.  
*Possible Uses*—Same as white spruce.

*Mechanical Pulp*

Yield 2,400 lb.  
*Character*—Excellent color and strength.  
*Possible Uses*—Similar to white spruce.

**SITKA SPRUCE**—*Picea sitchensis*. Wt. 24 lb. Fibre 3.5 m.m.

*Range*—Coast region (extending inland about fifty miles) from Alaska to northern California (Mendocino County).

*Common Names*—Tideland Spruce (Cal., Ore., Wash.); Menzies' Spruce; Western Spruce; Great Tideland Spruce (Cal. lit.).

*Sulphite Pulp*

Yield 1,080 lb. Easily bleached.  
Easily pulped—excellent strength and color.  
*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,150 lb.  
*Character and Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 2,040 lb.



Character—Slightly grayish color.

*Possible Uses*—Similar to white spruce.

**WHITE SPRUCE**—*Picea canadensis*. Wt. 24 lb. Fibre 2.8 m.m.

*Range*—Newfoundland to Hudson Bay and northward to Alaska; southward to Northern New York, Michigan, Wisconsin, Minnesota, South Dakota, Montana, and British Columbia.

*Common Names*—White Spruce (Vt., N.H., Mass., N. Y., Wis., Mich., Minn., Ont.); Single Spruce (Me., Vt., Minn.); Bog Spruce (New Eng.); Skunk Spruce (Wis., Me., New Eng., Ont.); Cat Spruce (Me., New Eng.); Spruce (Vt.); Pine (Hudson Bay); Double Spruce (Vt.).

**Sulphite Pulp**

Yield 1,030 lb. Easily bleached.

Easily pulped. Excellent strength—excellent color.

*Possible Uses*—White spruce is considered the standard sulphite pulpwood and is used for news, wrapping, book, high-grade printings, etc.

**Sulphate Pulp**

Yield 1,150 lb. Character—Very strong fine fibre.

*Possible Uses*—Highest grade of kraft paper and strong fibre board.

**Mechanical Pulp**

Yield 2,400 lb.

Character—Excellent color and strength.

*Possible Uses*—For practically every purpose where groundwood pulp is required.

**ALPINE FIR**—*Abies lasiocarpa*. Wt. 21 lb. Fibre . . .

*Range*—Rocky Mountain region from Colorado to Montana and Idaho, and westward through northern Oregon and northward to Alaska (latitude 60 degrees).

*Common Names*—Sub-Alpine Fir (Utah); Balsam (Colo., Utah, Idaho, Oreg.); White Fir (Idaho, Mont.); White Balsam; Oregon Balsam-tree (Cal.); Pumpkin-tree; Alpine Fir; Mountain Balsam (mountains of Utah and Idaho); Down-cone Fir (lit.); Downy-cone Sub-Alpine Fir (Cal. lit.)

**Sulphite Pulp**

Yield 1,010 lb. Easily bleached.

Easily pulped—good strength—excellent color.

*Possible Uses*—As a substitute for white spruce.

**Sulphate Pulp**

Yield 1,050 lb.

Character—Long fibre—excellent strength.

*Possible Uses*—Same as white spruce.

**Mechanical Pulp**

Yield 2,070 lb.

Character—White fibre, fair strength.

*Possible Uses*—Same as white spruce.

**AMABILIS FIR**—*Abies amabilis*. Wt. 22 lb. Fibre

*Range*—From British Columbia (Fraser river and southward in the Cascade mountains) to Washington and Oregon.

*Common Names*—Red Fir; Red Silver Fir (Western Mountains) Fir (Cal.); Lovely Fir (Cal. lit.); Lovely Red Fir (Cal. lit.); Amabilis or Lovely Fir (Cal. lit.); "Larch" (Oreg. Lumbermen).

**Sulphite Pulp**

Yield 1,060 lb. Easily bleached.

Easily pulped—fair strength—excellent color.

*Possible Uses*—As a substitute for white spruce.

**Sulphate Pulp**

Yield 1,100 lb.

Character—Long fibre, excellent strength.

*Possible Uses*—Same as white spruce.

**Mechanical Pulp**

Yield 1,870 lb.

Character—Long fibre of excellent strength; color slightly grayish.

*Possible Uses*—Same as white spruce.

**BALSAM FIR**—*Abies balsamea*. Wt. 21 lb. Fibre 2.7 m.m.

*Range*—From Newfoundland and Labrador to Hudson Bay and northward to Great Bear Lake region, and south to Pennsylvania (and along high mountains to Virginian), Michigan and Minnesota.

*Common Names*—Balsam Fir (N.H., Vt., Mass., R.I., N.Y., Pa., W. Va., Wis., Mich., Minn., Nebr., Ohio, Ont.; Eng. cult.); Balsam (Vt. N.H., N.Y.); Canada Balsam (N.C.); Balm of Gilead (Del.); Balm of Gilead Fir (N.Y., Pa.); Blister Pine (W. Va.); Fir Pine (W. Va.); Firtree (Vt.); Single Spruce (N. Bruns. to Hudson Bay); Silver Pine (Hudson Bay); Sapin (Quebec); Cho-koh-tung = "Blisters" (N.Y. Indians).

**Sulphite Pulp**

Yield 970 lb. Easily bleached.

Easily pulped—good strength—excellent color.

*Possible Uses*—Same as white spruce.

**Sulphate Pulp**

Yield 1,010 lb.

Character—High grade kraft fibre.

*Possible Uses*—Same as white spruce.

**Mechanical Pulp**

Yield 1,910 lb.

Character—Good fibre length, strong and good color.

*Possible Uses*—Same as white spruce.

**GRAND FIR**—*Abies Grandis*. Wt. 23 lb. Fibre 3.2 m.m.

*Range*—Coast region from Vancouver Island to California (Mendocino County), and from Washington and Oregon to Northern Idaho and Montana.

*Common Names*—White Fir (Cal., Oreg., Idaho); Silver Fir (Mont., Idaho); Yellow Fir (Mont., Idaho); Oregon White Fir (Cal.); Western White Fir; Grand or Oregon White Fir (Cal. lit.); Great California Fir (lit.).

**Sulphite Pulp**

Yield 980 lb. Easily bleached.

Easily pulped—fair strength—excellent color.

*Possible Uses*—As a substitute for white spruce.

**Sulphate Pulp**

Yield 1,140 lb.

Character—Good strong grade of kraft pulp.

*Possible Uses*—Same as white spruce.

**Mechanical Pulp**

Yield 1,950 lb.

Character—Good fibre, color and strength.

*Possible Uses*—Same as white spruce.

(To be Continued.)

## Canadian Paper Trade Association

Annual Meeting at Montreal.

Enthusiastic and representative in every respect was the annual meeting of the Canadian Paper Trade Association, which was held at the Ritz-Carlton Hotel, Montreal, on Tuesday and Wednesday, Sept. 15th and 16th. Prominent members of the trade were present from all parts of the Dominion and everything passed off pleasantly and smoothly. The Conference, which was held with the manufacturers, by the various sections of the Canadian Paper Trade Associations proved very profitable and served to enhance the goodwill and spirit of unity which has prevailed between manufacturers and jobbers since the launching of the Dominion wide wholesalers organization in Toronto over a year ago.

The officers elected for the coming year were: Honorary president, J. F. Ellis, Barber, Ellis, Limited, Toronto; president, John Martin, John Martin Paper Co., Winnipeg; first vice-president, C. W. Graham, Buntin, Gillies & Co., Hamilton; second vice-president, Ernest W. Dawson, of W. V. Dawson, Ltd., Montreal, treasurer, E. S. Munroe, Wilson, Munroe & Co., Toronto; secretary, N. L. Martin, Toronto.

The first day of the Convention was devoted to association matters and an interesting and comprehensive report covering the work of the past year and what had been accomplished was read by the president, J. F. Ellis, who spoke of the better relations which had been fostered between the manufacturer and jobber and the progressive moves that had been made in the interest and welfare of the trade as a whole. Gratifying reports were also presented from secretary, N. L. Martin and treasurer, E. S. Munroe. A paper was read by Mr. E. Bogue of McFarlane, Son & Hodgson, Montreal, on "the advisability of impressing on the manufacturers propriety of recognizing the legitimate jobber as the legitimate outlet for his product." This was followed with close attention and another paper, which aroused much favorable comment, was one prepared by John Martin, of Winnipeg, on "the necessity for a better understanding between the manufacturer and the jobber as to manufactured lines." Owing to the absence of Mr. Martin his paper was read by Mr. A. Clark Hunt, secretary-treasurer of the company.

Another paper was read by C. J. Kay, of the Columbia Paper Co., Vancouver. Mr. Kay dealt with great detail on many matters and gave his opinion as to the proper classification of the lines carried by paper dealers and the approximate percentage which should be added by jobbers in their classifications to adequately provide for costs in handling representative groups. Mr. Kay pointed out that it was essential to get a larger profit on some lines which did not move very freely than there was on those which turned over rapidly. It was necessary to stock certain grades of paper as a matter of convenience and service, although there might be very little call for these lines and, owing to the fact of their remaining on the shelves for a much longer time than the more active merchandise these ranges should carry a higher percentage of profits.

A committee of five was appointed to consider the classification of the lines carried by the jobbers with the object of placing a copy of the amended report in the hands of every member. The committee met later and considered various phases of the question and it

is expected a report will be drawn up and sent to the members in the near future.

An able and thoughtful paper on "the abuses of the credit system" was read by Ernest Dawson of W. V. Dawson, Limited, Montreal, and met with the approval of the gathering. Mr. Dawson brought out a number of valuable and timely pointers showing various weaknesses and shortsightedness in the matter of the jobbers extending certain credits and suggesting several practical and helpful aids in overcoming these abuses.

A committee on mill relations was appointed to consider several important topics.

In the afternoon there were two separate meetings, one of the book and writing section and the other of the wrapping section. In the latter a number of matters of great interest to the jobbing trade were taken up and discussed while in the book and writing section the matter of publishing the recognized trade customs as applied to the handling of paper was discussed. It was decided that these trade customs should be printed in future price lists issued by the association. Certain matters with respect to the standing of the industry and the mutual benefit of the manufacturer, the jobber and the consumer of paper were discussed. These will be taken up with the manufacturers.

On Wednesday there was a joint meeting of the wrapping paper manufacturers and jobbers, at which various affairs in connection with freight, classifications, etc. were reviewed and considerable progress made. In the afternoon there was a joint meeting of the book and writing merchants and the mill-men. The principal item discussed was the desirability, from the standpoint of the consumer, of adopting standard grades, especially on low priced writing papers. A committee was formed for the purpose of placing some concrete suggestions before the manufacturers.

The meeting also passed a resolution emphasizing the absolute necessity, in view of present conditions, of vigorously pushing the sale of Canadian made papers.

In the evening an informal dinner was tendered the visitors and the members of the Montreal trade at the St. James Club. Owing to the absence of W. C. Ridgway of New York, secretary of the National Paper Trade Association, who had been invited to deliver an address but was prevented from attending, there was a round table conference in which all members took part.

In the course of the discussion a pressing invitation was extended the Canadian Paper Trade Association to hold its next annual meeting in Winnipeg and the matter will be decided later by the executive. As an example of the closer co-operation brought about by organization and mutual discussion, C. J. Kay of the Columbia Paper Co., Vancouver, stated that he and Fred Smith of Smith, Davidson and Wright, Vancouver, had come so close together, not only in a business way but in personal associations that they were occupying twin beds. The gathering, which was very enjoyable, was presided over by C. H. McFarlane of McFarlane, Son and Hodgson, Montreal.

Owing to the absence of John F. Ellis, of Toronto, President of the Association, who has not been feeling very well of late, and of John Martin of Winnipeg, First Vice-president, H. B. Donovan Second Vice-president, presided at the opening sessions. After the officers for the coming year were elected, the new first vice-president, C. W. Graham of Hamilton, took the chair for the remainder of the convention.

# Paper Industry in the Devastated Regions

(Translated from *La Papeterie*, 41, 1, May 25, 1919.  
by A.P.—C.)

The fairly regular requisitions, the systematic robbery and pillaging, the wanton destruction and deprivations of all kinds committed by the Germans in those regions of France and Belgium which they occupied, are too well known to require any comment.

Our paper industry was not spared more than any other. We unhappily do not possess even approximate figures of the total losses sustained by paper and pasteboard mills. The only figures which can give an idea of the extent of these losses are those reported by an investigatory committee appointed by the *Chambre des Députés*. These include losses sustained in printeries as well as in paper and pasteboard mills.

Buildings and equipment	.....	500 million francs
Raw materials and supplies	.....	50 million francs
Losses due to non-operation		
(6 years)	.....	150 million francs

Total	.....	700 million francs
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What indemnities and compensations will be granted these unfortunate manufacturers? No one can foretell. Judging from the results of an investigation which we have carried out, little or no help has been forthcoming from the Government.

The following are the data which we have been able to collect.

## France.

Cartonnerie A. Minguet, à Pierrepont-sur-Avre (Somme). The mill was thoroughly pillaged, all the brass removed and many of the machine parts broken.

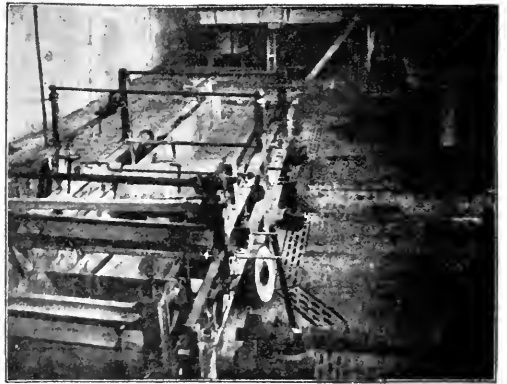


1. At La Hulpe, Belgium—A "Victory" for the Hun.

The proximity of the firing-line prevented the Germans from removing the machinery to Germany. During the Allied counter-offensive in August, 1918, the mill was subjected to a severe bombardment which destroyed 75 per cent of the buildings and greatly damaged the rest. The cleaning up of the debris was started at the end of August, 1918, but will probably not be finished before August, 1919. Part of the equipment can be repaired, and Mr. Minguet hopes to start up one pasteboard machine towards the beginning of winter. The other one is a complete loss and will be replaced. The main difficulty in the way of resumption of operations

lies in the absence of workmen's dwellings. These were promised by the Government several months ago, but word has just been received that they will be delivered at some future date which cannot be specified.

*Société anonyme des Papeteries et Cartonneries du Nord de la France* (Anciens Etablissements Clabaut et Grou, à Marquette-lez-Lille.) One of the machines was completely destroyed. The wet end of another was partly destroyed and the whole machine is in a bad shape. All the equipment for working up the stock suffered considerable damage. The firm hopes to start up one machine towards the end of July or the beginning of August.



2. At La Hulpe—Parchmentizing machine demolished.

*Papeteries Jacquemin-Froment à Courlandon, par Fismes (Marne)*. The Courlandon mill was destroyed by the Huns during their advance of the 27th of May, 1918. Mr. Jacquemin-Froment would be willing to rebuild, but unfortunately, like many others, he encounters difficulties on all sides. The losses amount to several million francs and he has so far been unable to obtain an advance to start working.

*Société anonyme des Papeteries de Maimbottel, à Maimbottel (Meurthe-et-Moselle)*. Here nothing remains but the buildings. The equipment was first destroyed and then shipped away, presumably to be converted into munitions. The losses amount to one and a half million francs. The company have not yet decided if they will rebuild.

*Société anonyme des Papeteries de Murtin-Bogny (Ardennes)*. This mill also was destroyed. The clearing-up is being done by a squad of prisoners. It is expected the buildings will be erected by the end of the year.

Many other mills were destroyed, pillaged or considerably damaged, but we have not yet proper information as to the amount of reconstruction which has been done.

*La Papeterie Arnould, à Rethel (Ardennes)* was completely destroyed, and a whole new equipment has been ordered.

*La Papeterie d'Evergnicourt (Aisne)* has also been destroyed.

Les Papeteries Dailé Frères & Lecompte, à Bois-Écaille, Nord, was destroyed. Sixty-five machines, with their electric motors, were shipped to German captivities, and about fifty other machines destroyed. We understand that some of these machines have been found in Germany.

All the stocks of paper, the plates, etc., of "La Papeterie," which were at the Imprimerie Emery at Chauny, were stolen by the enemy.\*

#### Belgium.

Our Belgian friends fared equally badly at the hands of the enemy. In their case the destructions were not so frequent, but on the other hand robberies



3. The paper mill at La Hulpe—All the machinery stolen, the destruction is complete.

and unwarranted requisitions were the rule.

Société anonyme des Papeteries Delcroix à Nivelles (Belgique). The shops at Baesrode and the mill at Crainhem have been idle since August, 1914. They suffered considerably from the occupation by the enemy and from his requisitions and it will be some months before operations can be resumed. The most important mill, which is at Baulers, was not so much affected, and in spite of numerous vexatious requisitions the majority of the brass fittings and most of the belts were successfully concealed. Over a dozen times work was resumed on a small scale to prevent the dismantling of the plant and the deportation of the workmen. Operations have now been permanently resumed and orders for standard qualities can be promptly filled.

Société anonyme des Papeteries d'Ensival et de Malmédy, à Ensival-les-Verviers, Belgique. Here the Germans took away all the belts, "wires," felts, horses, wagons, and even the couch and press rolls. The board of directors has laid claims for its lost equipment but has as yet obtained nothing. Nevertheless, the refitting of the mill is being pushed, and it will probably resume operations within a month.

Société anonyme des Papeteries de l'Escant à Gentbrugge-les-Gand, Nord. The mill was stripped to a considerable extent; but as some of the machinery was recovered, operations have now been resumed.

Papeterie de Rhode Saint-Genèse. Etablissement

\*In the J. Soc. Chem. Ind., June 30, 1919, facing pages 222R and 223R there are some excellent photographs showing how very thoroughly the Germans laid out the work of destruction at Chauny.

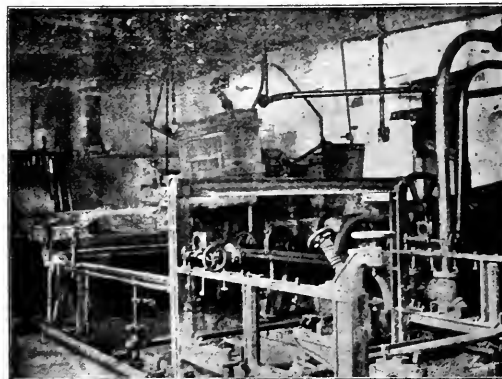
Demeurs Frère & Soeurs). This plant was not plundered, and a relatively small part of the equipment was requisitioned. It will probably be operating again in the near future.

Société anonyme des Papeteries de Droogenbosh (Belgique). The mills of this firm are being partially refitted so that they may be able to resume operating on a limited scale. So numerous were the requisitions and so considerable the damage which was inflicted that normal operations cannot be expected before the end of this year.

Papeteries de Thullin (Belgique) (Maison Ducoulx-Voituron). This mill was particularly hard hit by the Huns, who made away with all the felts, belts and raw materials, destroyed some of the machinery and did considerable damage to the rest. It will be many months before this mill can turn out any paper.

Société anonyme de la Cartonnerie de Dieghem (Ancienne F. Sine G. de Conick). This mill suffered no losses owing to the fact that from time to time it supplied wrapping paper to various Belgian relief committees.

Société anonyme des Papeteries de Saventhem. This firm operated two mills, both at Saventhem, the "Old" which had four paper machines, and the "New" with two. The equipment of the Old mill was saved. In January, 1918, the German military authorities requisitioned the New mill to use it as an ammunition depot. While it was occupied by the enemy a considerable portion of the machinery was stolen. The total losses, including machinery stolen or destroyed and damages to the premises, are estimated at a million francs. Though the required formalities have been complied with, no word has been received concerning



4. Mont St. Saint-Guibbert mill—All copper parts removed.

the recovery of the stolen machinery. It is therefore impossible to state, even approximately, when operations will be resumed. Owing to market conditions and to the importation of foreign paper, the Old mill is working below its full capacity.

Mr. Ed. Chantrenne, the well-known manufacturer of paper mill machinery, had the satisfaction of finding in Germany, in an almost perfect condition, all the machinery which the Huns stole from him. The authorities have promised that everything would be returned to his shops by the end of May. During 1914, 1915 and 1916 he was able to keep his plant in operation in spite of great difficulties; but from 1917 on un-

warranted requisitions and robberies were the rule.

Mr. Léon Thiry, manufacturer of paper mill machinery, made the following remarks to La Papeterie: "At the present time our paper mills are idle, like all our other industries. But you must not conclude that our technical men have wasted their time since August, 1914. A great deal of work has been accomplished, work which required close co-operation between the paper maker and the machine designer, and which has produced results which would certainly not have been achieved had everybody been engaged on normal production. As far as we are concerned, we have overhauled all our plans, created new types of paper machines, and perfected machines which we scarcely constructed before the war and of which we intend making a specialty. We unfortunately have very limited means at our disposal. A large number of our tools were requisitioned, including many which had been specially adapted to our line of work, and which cost us many years of labor. During the war, in spite of edicts to the contrary, we made tools to replace the ones which were taken from us. We came within an ace of losing the fruit of all our labors through an anonymous denunciation; but luckily the Armistice saved us. These tools, however, were far from being all finished, and since the evacuation of Belgium we have been at work refitting our plant. It will be a long time before this is completed and though we can undertake a certain amount of work for paper mills, our output is very small.

Your proposed investigation of the paper industry in Belgium should prove highly interesting. As production was checked to the point of being negligible, all our energies were naturally devoted to perfecting equipment and processes and to devising new ones. You can lay before your readers the results of five years' study and experimenting."

#### U.S. COAL FOR SWEDEN.

Stockholm, Sweden, is to get five million tons of coal annually from the United States under an agreement reached with American exporters, according to the Dagens Nyheter. Although the freight charges on the coal will be about \$25 a ton, the agreement is welcomed here, as Sweden is beginning to feel the lack of coal due to British restrictions on its shipment from Germany.

#### NET PROFITS SMALL IN PAPER BUSINESS.

New York, September 17.

Price advances on paper have been counterbalanced by wage advances for workmen, with the result that net profits are very small, according to E. H. Naylor, secretary of the Writing Paper Manufacturers' Association of New York, who addressed the final session of the annual convention of the United Typothetae of America in New York last week. He made this assertion to discredit statements that the paper manufacturers are making large profits because of the prevailing high prices. The price of paper will never return to the pre-war level, because labor will not accept pre-war wages, he added.

Several resolutions were adopted, one of which declared that hampering industries in such a way as to reduce production should be considered "an economic" crime.

William Green, of New York, was elected president of the organization.

## Controller Protects Canadian Press

Speculation as to whether or not the judges of the Paper Control Tribunal had considered the costs of the John R. Booth mill in arriving at their price of \$66 per ton, from July 1st to November 30th 1918, together with Mr. Pringle's assertions that the Canadian press was going to be kept supplied with paper regardless of contracts the mills might have were the principal features of the newsprint inquiry at Ottawa last week. Up to Monday this week no definite official statement had been made by the Controller that the Booth costs had been taken in. It is understood that some kind of an enquiry is going on to find out definitely if the Booth costs were included, and if not why they were left out.

As will be remembered the costs for the Booth mill, represented the last of the "high cost" mills to be set down in the schedule for the five plants when the newsprint case went before the appeal judges for consideration. Brompton was eliminated nearly a year ago and the Eddy Company which is in pretty much the same position as to costs of manufacture as the Booth plant was counted out as it was supplying one hundred per cent of its output to the Canadian trade. The first intimation that the Bantthaplaan costs of the Booth plant had not been considered was made at the inquiry. Mr. Pringle was of the opinion they had not been included. Mr. George F. Henderson, K.C., counsel for the Booth mill thought the Controller was "mistaken." Mr. Montgomery, K.C., general counsel for the mills gave it as being his understanding that the Booth costs had been counted in. However he did not positively know. The Controller intimated that a wire could be sent to Mr. Justice White chairman of the Appeal Board Tribunal, for the purpose of definitely finding out what had been done by the Judges in this regard.

Another of the important happenings which developed during the hearing was the interpretation by Mr. Pringle that the Tribunal in setting the price of \$66 for the period mentioned above, had created a "basis" for further price fixing or the setting of prices for earlier or later periods. Mr. Pringle told of a wire he had sent to the Judges and the reply which had been received. He interpreted this to mean that the price fixed by the judges was a "basis." It took care of the cost of manufacture, and raw material and allow a profit. It was further pointed out that with the \$66 price as a "basis" that they if the costs in the previous periods or in the later periods which have not yet been fixed, went down, that the price would go down also, and if they had increased why then a price higher than \$66 per ton should be allowed.

Actual progress in the newsprint probe was not made as Mr. W. N. Tilley, K. C., counsel for the newspaper publishers was not able to be present, and Mr. Pringle pending his absence plainly stated that he was not going to make or give any decisions. Such a course it was felt was the only fair one to take as it is obvious that the newspapers have certainly a right to be heard in their discussion of the finding of the Judges, which set the price at \$66.

At the outset of the session and before counsel had spoken Mr. Pringle said he desired to make a statement. At the present time he said a serious situation

existed with some Canadian newspapers in the matter of obtaining supplies and they had difficulty in keeping up with their paper requirements. He asked that every one of the paper manufacturers supply him at the earliest possible moment with a statement showing how much paper they were exporting and the amount they were supplying to the Canadian trade. "It is hardly fair to have some companies supplying very little and other companies selling more than their required percentage in Canada to keep the Canadian trade supplied" said the Controller. In this connection he plainly stated he did not refer to the E. B. Eddy Company which he said was working night and day and supplying 100% of its output in Canada, and even at that was not able to take care of the demand. "The situation at the present time is a very serious one and some of the Canadian newspapers have very little supply on hand," said Mr. Pringle. He then referred to his determination to keep the Canadian press supplied, and regarded export contracts which the mills might have as a secondary question.

Mr. Montgomery, K. C., on behalf of the manufacturers in replying to Mr. Pringle made reference to the case of the decision of the Federal Trade Commission whereby it was left optional whether or not the newspapers could make a contract with the Commission or a "term" contract with the mills. In nearly every case, Mr. Montgomery stated the customers had preferred a "term" contract, with the result, now that restrictions on the use of paper were being removed, that nearly all of the mills were working up to one hundred per cent capacity and were pretty well filled up with contracts.

"I know that is pretty much the case. Abitibi for instance tells me that to keep its contracts filled it has to go into the market and purchase paper, to sell at a loss. My duty however is to see that the Canadian Press is kept supplied with paper. I want to know what mills I can get sheet news from. It used to be made in this district by John R. Booth. Booth now, I understand, has stopped "manufacturing it," said the controller.

Mr. H. I. Thomas of the Booth plant at this juncture informed Mr. Pringle that they had practically stopped the manufacture of sheet news and pointed out that while they were manufacturing it the Company had always been anxious to oblige the Controller and assist him in this regard in filling the orders which had been sent in, in the form of complaints, to him.

Mr. A. J. Thompson, assistant counsel for the newspapers explained Mr. Tilley's absence. In reply to a suggestion from Mr. John F. Orde, K. C., counsel for the Eddy mills, that Mr. Clarkson, government auditor, should ascertain costs previous to July 1st 1918, Mr. Pringle said:

"Mr. Clarkson tells me he has only the costs for two months previous to July 1918. Then there is a period which it appears to me is a matter for the Government to deal with. That will have to be considered. The Minister of Customs made the orders from March 1917 to December 20th 1917." Other questions arose from mill counsel as to the application of the \$66 price, which led the Controller to further say, "I thought it advisable to wire the chairman of the Paper Control Tribunal. His reply to me showed he (Mr. Justice White) did not consider sixty-six dollars as a general levelling up price, but only to be applied to the five months."

The Controller in reply to other queries by Counsel as to the sixty-six dollar price and the application of its "levelling up", and also to the period covered by the orders of the Minister of Customs prior to his (the Controller's) appointment, Mr. Pringle suggested that Counsel get together and take up the prices as existing at the time and let the Paper Control Tribunal deal with the whole matter.

In the discussion about whether or not the Booth costs were considered, Mr. Montgomery and Mr. Henderson both stated they would strongly object were it found that these costs were not taken into consideration. They maintained they were the only costs which reflected the costs of the "high cost" mills and it was only fair to consider them. On a tonnage basis they contended that Laurentide and Price Bros. mills were classed as low cost mills. Later on Mr. Pringle explained that the decision handed down by the Judges of the Tribunal was absolutely different from that given by the Federal Commission. In the decision of the Federal Trade Commission the reasons for the finding were given, in the Canadian decision they were not, or if they were they have not been announced.

The inquiry adjourned to the second week of October.

#### T. H. WATSON SPANISH RIVER DIRECTOR.

All ran smoothly at the special and general meetings of the Spanish River Pulp and Paper Mills held in Toronto last week. Shareholders ratified the special by-law authorizing the directors to borrow up to \$5,000,000 on 6 per cent. Serial mortgage debentures and to pay deferred interest talons on the bonds.

The prospect of shareholders receiving deferred dividends in the reasonably near future was discussed. The president said that the board of directors had under consideration a plan for disposing of back dividends, and that this would be submitted to the shareholders in the near future. It was pointed out that the redemption of the "A" debentures and the payment of postponed interest would leave the way open for consideration of dividend payments in the spring.

T. H. Watson, president of the Canadian Machinery Corp., was elected a director and the other members of the board, re-elected, with George H. Mead, as president and P. B. Wilson and Col. Thomas Gibson as vice-presidents. Mr. Watson succeeds J. G. Gibson, who retired from the board, having temporarily filled the vacancy created by the resignation of Sir William Stavert.

Of the bonds authorized \$35,500,000 will be offered in the near future. On February 1, next these funds will be used to liquidate the talons and promissory notes issued in respect of deferred interests on bonds and notes due in 1922, and to pay off on March 1 next the second mortgage debentures maturing in 1924.

"When these payments have been made," said President George H. Mead, in his circular announcement, "the company can consider the payment of dividends upon its capital stock, which, otherwise would have to be delayed until the repayment of the deferred interest in 1922."

The meeting was brief and uneventful, and there were no questions or words of criticism offered.

# Application of Formulas of Coal Analysis

A recent letter to the editor asks for an illustrative example showing how to apply a formula of the standard method for the analysis of coal for the calculation of moisture content and sulphur content on the basis of coal "as received." The request brings to mind many similar ones from students in days gone by. Not having made such a calculation in several ages we put the problems to the Research Department of the Laur-entide Company, and Paul G. Woodward, a member of the Technical Section, has kindly worked out the following illustrations, which apply to computations A and B on page 484 of the Pulp and Paper Magazine for May 22, 1919.

While referring to this article it should be noted that last three lines of it on page 486 belong on page 508, just above the title "The permissible differences," etc.

### Calculation of Sulphur (for example) in Coal "as received."

In Method "A" assume that by direct analysis the following results have been obtained:—

- Total moisture as received a%
- Moisture in air dry sample b%
- Sulphur in air dry sample c%

Now assume that 100 gr. air dry sample were taken for analysis. This sample, however, consisted of only 100-b gr. of oven dry coal, the remaining b grams being moisture. The c gr. of sulphur found was therefore contained in 100-b gr. of oven dry coal and the per cent sulphur in the oven dry coal was:

$$100 \frac{c}{100-b} = \frac{\% \text{ Sulphur in air dry sample}}{1 - \text{fraction moisture in air dry sample}}$$

To calculate the "as received" basis—100 grams of coal as received will contain 100-a grams of oven dry coal or gr. sulphur = lbs. oven dry coal  $\times$  % S in oven dry coal  $\times \frac{1}{100}$

$$= \frac{100-a}{100} \times \frac{\% \text{ Sulphur in air dry sample}}{1 - \text{fraction moisture in air dry sample}}$$

As this was contained in 100 grams coal as received, the per cent sulphur in the coal as received will be the same, or % Sulphur as received

$$= \frac{100-a}{100-b} \% \text{ Sulphur in air dry coal}$$

$$= \frac{1 - \text{fraction moisture in coal as received}}{1 - \text{fraction moisture in air dry coal}} \% \text{ S in air dry}$$

These corrections may be combined and a direct calculation made from the "air dry" basis to the "as received" basis by multiplying the "air dry" results by the factor

$$\frac{1 - \text{fraction moisture in coal as received}}{1 - \text{fraction moisture in air dry sample}}$$

An example of this method is given:

	Air Dried.	As Received.
Moisture . . . . .	1.20	4.51
V. C. M. . . . .	26.50	25.61
F. C. . . . .	61.60	59.54
Ash . . . . .	10.70	10.34
	100.00	100.00

Sulphur . . . . . 2.25 2.18

$$\text{Factor} = \frac{100 - 4.51}{100 - 1.20} = \frac{95.49}{98.80} = .9665$$

V. C. M. . . . .	26.50 $\times$ .9665 =	25.61
F. C. . . . .	61.60 $\times$ .9665 =	59.54
Ash . . . . .	10.70 $\times$ .9665 =	10.34
Sulphur . . . . .	2.25 $\times$ .9665 =	2.18

### Calculation of Moisture, Etc., in Coal "As Received."

Method "B" consists merely in drying the coal in two stages, first air drying, and second oven drying of a portion of the air dry coal.

In any sample of coal the  
a = weight oven dry coal

b = weight moisture lost in air drying

c = weight moisture additional lost in oven drying.

In air drying, of the total weight of the sample, a + b + c, b grams will be lost and the percent moisture lost in air drying will be

$$(1) 100 \frac{b}{a+b+c}$$

If this entire air dry lot is then oven dried and the moisture content calculated on the "as received" basis, and that the air dry basis, the % moisture lost in oven drying will be

$$(2) 100 \frac{c}{a+b+c}$$

and the sum of these two will evidently correspond to the total moisture as received.

$$(3) 100 \frac{b+c}{a+b+c} = 100 \frac{b}{a+b+c} + 100 \frac{c}{a+b+c}$$

Usually, however, the entire air dry lot is not oven dried, and therefore the weight "c" cannot be obtained. A portion of the air dried lot is oven dried and its per cent moisture content determined. Evidently % moisture content of air dried coal =  $100 \frac{c}{a+c}$  and it is

this term which must find expression in the calculation. This differs from term (2) only in the denominator, and may be made equal to it by multiplication by the factor

$$\frac{a + e}{a + b + e}$$

$$100 \frac{a + e}{a + b + e} = 100 \frac{e}{a + e} + 100 \frac{a + e}{a + b + e}$$

Returning to this correction factor

$$\begin{aligned} \frac{a + e}{a + b + e} &= 1 - \frac{b}{a + b + e} \\ &= 100 - \frac{100b}{a + b + e} \\ &= 100 - \% \text{ air dry loss} \end{aligned}$$

In equation (3) substitute the value obtained in (4)

$$\begin{aligned} 100 \frac{b + e}{a + b + e} &= 100 \frac{b}{a + b + e} + 100 \frac{e}{a + e} \\ &= 100 - 100 \frac{b}{a + b + e} + 100 \frac{e}{a + e} \end{aligned}$$

and bearing in mind the significance of these terms as obtained above

Total moisture as received = % moisture lost in air drying + % of air dry sample lost in oven drying  
 100 = % air drying loss

$$100$$

Although the above truly proves the validity of the formula given on page 484 its use is somewhat indirect and cumbersome. A simpler formula, based on direct experimental data, has been devised. In any analysis let

- a = weight of sample of coal as received
- b = grams moisture lost in air drying
- c = amount air dried coal taken
- d = grams moisture lost in oven

Percent total moisture as received =

$$100 \left( 1 - \frac{b}{a} - \frac{e - d}{c} \right)$$

This formula is more direct and involves only the substitution of analytical weighings. An example of this latter method of calculation is given as follows:—

Take 1000 gr. sample as received

Finding 90 gr. moisture lost in air drying

Then

Take 100 gr. sample air dried coal

Finding 1 gr. moisture lost in oven

Or, calculated by formula: Percent total moisture

$$\begin{aligned} \frac{1000 - 90}{1000} &= .91 \text{ or } 91\% \text{ air dried coal in sample as received.} \\ \frac{100 - 1}{100} &= .99 \text{ or } 99\% \text{ oven dried coal in air dried sample.} \\ .91 \cdot .99 &= .9009 \\ &= 90.09\% \text{ oven dried coal in sample as received.} \\ 100 - 90.09 &= 9.91\% \text{ total moisture in coal as received.} \\ &= 100 \left( 1 - \frac{1000 - 90}{1000} \times \frac{100 - 1}{100} \right) 9.91\% \end{aligned}$$

**FABLES FROM MILL PRACTICE.**

(By H. Tress.)

The chemist of the Wake and Doin Paper Company walked through the boiler-house one day. He seldom investigated its troubles, being kept perpetually busy determining the ash in samples of paper. He never caught up with these. The Old Man, who had very outspoken ideas on theory and practice, having worked the latter without the former for forty years, was a crank on retention.

Then again the chief engineer was always getting his coal and feed-water analysed free by "treatment" specialists and steam saving concerns, who were optimistic about inducing the W. and D. Company to install their appliances.

The W. and D. boilers were of horizontal return tubular type and had delightful sags on their crown sheets.

On this day, the chemist glanced into the firebox of one of the boilers, opened for a vigorous "workin'". He noted a remarkable box-shaped affair about the center of the grate. It was perforated and greatly cracked, and the fire in its neighborhood seemed discouraged. He asked the chief engineer what it was for, and was advised to seek information from "that medicated idiot," in the office.

Next time the chemist was in the office, he asked Mr. Doin about the appliance. "Yes, I was going to talk with you about those things — it's in your department, I suppose. The inventor was in here a few weeks ago, and his idea appealed to me. You see, when hydrogen and oxygen are burned to form water, the flame is intensely hot; well, this idea is to inject a little steam into the fire at its hottest part, and there the steam is broken up into hydrogen and oxygen by the heat, passes over the bridge wall, and being ignited there gives out great heat. It seems a great idea, but it's difficult to keep the distributor from breaking up. I wanted to ask what you as a chemist can suggest?"

"I would suggest that you look up the conservation of energy. It takes as much heat to break up the water into oxygen and hydrogen as is given out when they recombine."

The chemist returned to the laboratory and gave himself up to meditation.

The crows in a badly ventilated hall thought they were cheering the speaker of the evening; but they were really applauding the grippe.—The Fidelity Mutual Life Insurance Company.



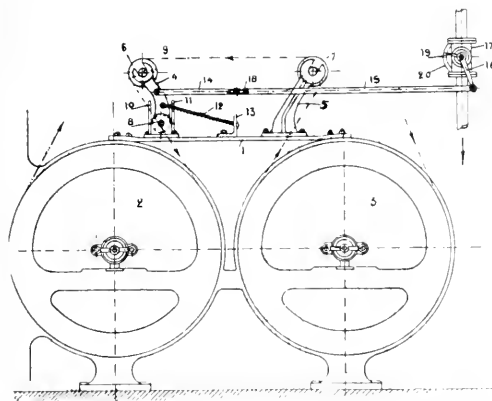
### HEAT REGULATOR FOR PAPER MACHINES.\*

The object of this patent is to obtain an automatic control of the steam fed into the dryers and hence to insure the proper degree of dryness in the paper. The invention is based on the following observation.

For a given quality of paper and a given degree of dryness there exists a definite relation between the dryness and the length of the paper at a certain point of its travel through the dryers. If the paper is insufficiently dried it will be longer, if too dry, shorter, than if it was properly dried. Hence, by a suitable device, this length may be used to regulate the amount of steam admitted to the driers.

The cut shows an elevation of the device.

The plate 1 is fastened at a certain point on the frame of the machine, for instance between the dryers 2 and 3, such that the paper shall there have acquired



the desired degree of dryness. The arms 4 and 5 carrying the rolls 6 and 7, are placed at a suitable distance from each other on 1. Five is stationary, but 4 is pivoted at 8 so that the center of 6 can describe an arc of a circle about 8 as center with 8.9 as radius, this arc being limited by the posts 10 and 11.

The sheet, which travels in the direction indicated by the arrows, limits the distance between 6 and 7, which distance is a function of the dryness of the paper at the point under consideration.

On the other hand the displacement of 6 towards 7 is limited by the spring 12, attached at 13, which works under compression. It is provided with suitable means for the adjustment of the compression.

A two-piece link, 14-15, transmits the displacements of the arm 4 to the lever 16 which operates the steam valve 17. The valve should, preferably, be sensitive; e.g., a butterfly-valve.

By means of this device the amount of steam admitted into the machine is made dependent on the length of the paper between rolls 6 and 7, and consequently on the dryness of the paper.

Besides the adjustment of the spring, there is another possible adjustment; viz., that of the two-piece link 14-15, which telescopes at 18.

The steam-valve carries an indicator-needle 19 which moves in front of a graduated scale 20.

\*Translated from *La Papeterie*, 41, p. 104 (June 25, 1919) for the *Pulp and Paper Magazine*.

### WAYAGAMACK'S ENGLISH CONNECTIONS.

In the *Pulp and Paper Magazine* for August 14th there was an item implying that the Wayagamack Pulp and Paper Company had opened their own office in London. This item, it is pointed out by an official of the company, is likely to give some people the impression that the company has an independent office in England. It is well known however, among the trade that the products of the Wayagamack Mill are being placed on English market through the Canadian Kraft, Limited, whose sole selling agent in Great Britain is the Hodge-Sherriff Company, Craven House, Kingsway, London, W. C. 2.

In the last issue of the *Magazine* is a statement from Mr. Hodge regarding the possibilities in England, and particularly the lines manufactured by Wayagamack. These possibilities have already been referred to in the editorial columns of this journal and the situation is evidently appreciated by the Wayagamack Company, because they are already very large exporters of their excellent kraft paper. In fact we have understood that they are not able to produce sufficient paper at the present time to satisfy the calls from their representatives on the other side.

In order to indicate how much of an impression has been made on the English market by the Wayagamack and other Canadian brands of kraft paper, the following item is quoted from the *World's Paper Trade Review* for August 15th, entitled:

#### Canadian Kraft Paper.

"Last week when writing of the improved quality of kraft paper being produced by one English mill, we stated that "even the Canadian samples lacked something of the real character."

Mr. W. S. Hodge, of the Hodge-Sherriff Company, agents for Canadian Kraft, Limited, distributors of Wayagamack Kraft Paper, has called upon us this week and taken strong exception to our remarks concerning the character of Canadian kraft paper. We have inspected samples which Mr. Hodge has handed to us of the M. G. kraft paper produced at the Wayagamack plant at Three Rivers, Quebec, in weights 20 by 30, 17½ lbs. to 60 lbs., and these samples certainly prove that at least one Canadian Manufacturer has nothing to learn from his Scandinavian competitors. The samples submitted are all that Mr. Hodge claims for them. The pulp is specially strong and clean, and an exceptionally high grade is obtained, and the underside is specially smooth and free from grit. We will gladly admit that these samples are the equal of any Scandinavian Kraft Paper and it is a matter of congratulation that such a high quality is being produced in the British Empire.

If the quality has ever varied from the high grade shown us by Mr. Hodge, that gentleman points out that such will have been produced during the Great War, when a large number of Wayagamack's skilled workers had enlisted with the Canadian Forces so that the Canadian Manufacturer would for a time naturally be at some disadvantage in competing with a neutral country."

#### E. W. DAWSON WAS ELECTED.

In the report of the meeting of the recent meeting of the Canadian Paper Trade Association, it was stated that C. H. McFarlane was elected second Vice-President. This was incorrect, as Ernest W. Dawson of W. V. Dawson, Ltd., was honored with this position.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-14. Microscopical analysis of fibres.** (Analyse microscopique des fibres.) Compt. Rend., through *La Papeterie*, 41, 1, May 25, 1919, p. 30. The composition of the iodine-sulphuric acid reagent proposed by Vétillard is not satisfactory owing to insufficiency of iodine and too high a concentration of sulphuric acid. Pontis proposes the following formula: A, iodine solution made up of KI 3 g., water 100 g., resublimed I in excess; B, acid solution made up of C. P. H<sub>2</sub>SO<sub>4</sub> (66° Be) 24 g., water 16 g., C. P. glycerine (22 Be) 16 g. The water and acid are first mixed, and after cooling, the glycerine is added with continuous agitation and cooling. The reagent must be made fresh at least once a month. The author recommends first treating the fibres with alkali, and then with a bleaching agent before using the reagent, more satisfactory results being thus obtained as the fibres are thus detached from one another and are white. Late fibres, however, generally remained agglomerated. A. P.—C.

**A-14. The strengthening of filter-paper by treatment with nitric acid.** (Renforcement du papier-filtre par traitement à l'acide nitrique.) Clayton Beadle, Chem. News, 1915, through *La Papeterie*, 41, 1, May 25, 1919, p. 30. Francis (J. Chem. Soc.) was the first to draw attention to the fact that filter-paper is greatly strengthened by treatment with nitric acid of 1.42 sp. gr. The paper need but be moistened with, or dipped in, nitric acid, without any special precautions, then washed and dried. A test strip which, before treatment, broke under a load of 100-150 g., did not break, after treatment, under a load of 1,500 g. The treated filter-paper, when placed in a funnel in the usual manner, can easily withstand the pressure of an ordinary filter-pump. Instead of treating the whole paper, the point only of the filter need be dipped in the acid. A very simple method of treatment, due to E. J. Bevan, consists in pouring a few drops of acid into the point of the paper in the funnel, turning rapidly to spread the acid, and washing off the excess acid.—A. P.—C.

**K-18. Improvement to paper winders.** (Perfectionnement aux bobineuses utilisées dans l'industrie du papier.) Fr. patent No. 479,857, granted to Léon Thiry, Belgium. *La Papeterie*, 41, 1, May 25, 1919, p. 11. The patent covers a device whereby the paper may be wound more or less tight as desired, and at the same time the winding may be made quite uniform in spite of the possible irregularities in the paper. This is obtained by regulating the pressure of the roll of paper on its supporting rolls. The bearings of the winder are not fixed, the amount of displacement being regulated by means of a friction brake. By a very ingenious device a downward pressure may be exerted on one of the bearings, while an upward pressure is exerted on the other. A. P.—C.

**K-14. Machine for cutting and rewinding paper.** Machine à couper et à rebobiner le papier. Fr. patent No. 463,440, granted to Papeterie de Nanterre, Seine, France. *La Papeterie*, 41, 1, May 25, 1919, p. 7. The distinctive feature of the invention lies in the fact that the cylinder on which the paper is cut by means of the rotary knives is given a slow to-and-fro

longitudinal motion. This prevents the cylinder from becoming grooved by the knives and ensures a uniformly clean-cut edge. A. P.—C.

**R-2. Contribution to the history of paper-making in France.** (Contribution à l'histoire de la papeterie en France. *Papeteries de l'Angoumois*.) Desmarest. *La Papeterie*, 41, 1, May 25, 1919, p. 19. Extracts from the diary of P. A. Henry Villarmain, merchant at Angoulême and owner of several paper mills. The diary was begun in 1764 and finished July 16th, 1814. (Cont'd) A. P.—C.

**R-2. The French school of paper-making at Grenoble.** (L'Ecole Française de papeterie à Grenoble.) Barbillion *La Papeterie*, 41, 1, May 25, 1919, p. 2. A sketch of the origin, aims, organization and equipment of the school, followed by a partial list of the work published and the experiments carried out.—A. P.—C.

### TECHNICAL QUESTIONS.

(From *La Papeterie*.)

**Quest.**—I have just started working as foreman in a mill making semi-fine papers. I notice that there are many breaks in the dryers but hardly any at the wet presses. The tension of the sheet varies astonishingly at the dryers. There are also many breaks at the calenders. Could somebody tell me what percentage of broke should normally occur at the dryers and at the calenders?

**Ans.**—To give a satisfactory reply it would be necessary to see the machine under working conditions for some time. The following causes of breaks, however, are often overlooked. Owing to improper draining of the condensed steam in the dryers the action of the latter is not uniform and consequently the dryness of the paper varies. The dryers are sometimes of uneven thickness, causing uneven drying of the paper. There may be a certain amount of play at the ends of the dryer journals or in the gears, giving rise to large variations in the tension of the paper. If the dryers do not turn true there will also be a variation in the tension.

**Ans. 2.**—The fault lies with the wet press and the lack of skill or of goodwill of the machine tender. The pressure should be steady and even on both sides of the wet press, and there should be a good steady pressure from there to the dryers. If you cannot increase the pressure slow down the machine.

**Ans.**—The dryers should be closely watched and the steam pressure adjusted to the quality of paper and maintained as constant as possible. The dryers should be true and parallel. The percentage of broke will vary according to the composition of the paper, its thickness, and the degree of refining of the pulp. The following may be considered a good average for printing paper, rather heavily loaded, and made from chemical pulp:

Wet broke at the presses . . . . .	Usually insignificant
Broke at the dryers and winder . . . . .	0.45%
Broke at the cutter . . . . .	2.00
Broke at the sorting room . . . . .	5.05
Broke at the calenders . . . . .	0.50

Total . . . . . 8.00%

Percentage of broke according to strength:

Weight per sq. meter	40	50	60	70	80	90	100
% broke.	10	9	8	8	7	7	6

(Note by the Editor of La Papeterie—the broke seems excessive in the sorting room and exceptionally low at the dryers.)—A.P.C.

### WASTE OF CHEMICALS IN PULPING UNBARKED WOOD BY THE SULPHATE PROCESS.

In the manufacture of sulphite and mechanical pulp, all bark must be removed from the wood before chipping or grinding since any fragment of bark finding its way into the pulp makes its appearance as minute black specks in the finished sheet. For soda or sulphate pulp, the cleaning is often not so thorough, since the alkaline digestion tends to destroy the bark. Some mills bark the wood partly or not at all in the manufacture of sulphate pulp.

To determine the amount of chemical required to pulp unbarked wood, shipments of unbarked short-leaf yellow pine chips and of clear bark were tested by the Forest Products Laboratory of the U. S. Forest Service, at Madison, Wisconsin.

A determination upon a 10-pound sample showed that the unbarked chips contained approximately 96 per cent wood and 4 per cent bark, on a bone dry basis. Sulphate pulping trials on clear bark showed that 28.6 pounds of caustic soda and 10.6 pounds of sodium sulphite were required per 100 pounds of bone dry bark. A yield of 24.9 per cent. of a gelatinous brownish-black mass, containing pieces of unreduced bark, was obtained. This material could not be screened or washed because it clogged the screen openings. Hand sheets made of it gave physical indications of an extremely hydrated stock, the finished sheets being hard and parchementized.

The results indicate that in pulping a ton of wood (bone dry), consisting of 96 per cent wood and 4 per cent bark, 22.9 pounds of caustic soda and 8.5 pounds of sodium sulphite are needed to reduce the bark. The pulp produced from the bark is useless and, furthermore, produces a variation in color of the pulp, which makes it difficult to maintain a uniform shade in the finished paper.—Technical Notes of the F. P. L.

### INDUSTRIAL RESEARCH OF THE U.S. FOREST PRODUCTS LABORATORY AND ITS APPLICATION TO NATIONAL FOREST PROBLEMS.

(By the Director.)

In years to come our national forests will more and more become the sources of timber supply for the wood using industries. The industrial researchers of the Forest Products' Laboratory have a little-thought-of but very great and important bearing upon the management of the national forests, and through them upon the permanency of the wood using industries.

Each new development has an immediate and definite reaction upon national forest practice. The whole forest management policy of the service is directly dependent upon the relative usefulness of the various available species, and this in the final analysis is determined by industrial research and application. Furthermore, industrial research may develop new methods of utilization which may change the relative usefulness of different species, making available for use, species previously considered unmerchantable.

Again, developments in utilization may affect forest policy by permitting shorter rotations. Thus, it may be that the wider use of laminated and built-up construction will make feasible the efficient utilization of small trees, which will result in cutting the trees at an earlier age, or, in other words, in shorter rotations. A reasonable decrease in the length of rotation cuttings produces a comparatively large increase in the financial and productive efficiency of the operation.

The industries, in turn, benefit from this research, not only in the immediate improvement of conditions and processes, but also in the assurance that, as years go on, and timber supplies are drawn more and more from the national forests and other lands under forest management, the species best adapted to their individual needs will be available.

The forest service cup-and-gutter system of turpentine orcharding, developed by research, is a concrete example of the value of industrial research to the forest and to a dependent industry. Not only does this system increase the yield of naval stores, but it also greatly lessens the injury to the trees and reduces the danger of fire by eliminating a very large percentage of wind falls in tapped timber. It is a distinct contribution to the permanency of the turpentine industry.

It is evident, therefore, that industrial research in forest products is essential to the proper management of the national forests and the permanency of the industries dependent upon them, and that the interests involved are so inter-related that greatest results can be accomplished only through close contact and intimate knowledge of forest and industrial problems and conditions.

### SUGGESTS BRINGING IN BRITISH CAPITAL.

A recent dispatch from London to the Montreal Star says:

"Paper importers here concerned over their inability to receive an unlimited supply of Canadian pulp. It is stated that Canadians are sacrificing the permanent export market to secure present higher prices in the United States and it is suggested to The Star that British capital be induced to assist the extension of Canadian mills, otherwise Britain will grow to depend upon Newfoundland, where the pulp areas are being increasingly exploited with British capital, and South Africa, where experiments are being made in the manufacture of pulp wattle bark. Scandinavia also is making a heavy bid for the recovery of the former trade in these commodities."

### FORESTRY CAR MAKES A HIT.

"Our Railway Exhibition Car," writes Secretary Black of the Canadian Forestry Association, "is really making a hit all through Northern Ontario and has secured as many as one thousand visitors in a single day. The car especially fitted for the purpose and contains a multitude of exhibits showing the manufacturers of pulp and lumber. It has also a model forest nursery, model looking towers, telephone equipment, a working wireless system, a maple sugar bush, an exhibit of all forest insects and their depredations. Every evening a motion picture lecture is given in a local hall and deals almost entirely with the importance of the forest industries and the need of guarding their raw materials."

# Weekly Inventory at Soda and Sulphate Pulp Mills

Leaky tanks and pipe lines and slopovers from careless operation at soda and sulphate pulp mills are soon detected if a weekly inventory is taken of soda in the system. This can be accomplished closely enough for all practical purposes in the following way:

Make note of the density and height of liquor in the various storage tanks at a certain time each week, preferably during the Sunday shutdown. A table should be made for each different size of tank, by which the volume in cubic feet for any height of liquor may be read. Using the accompanying graph,

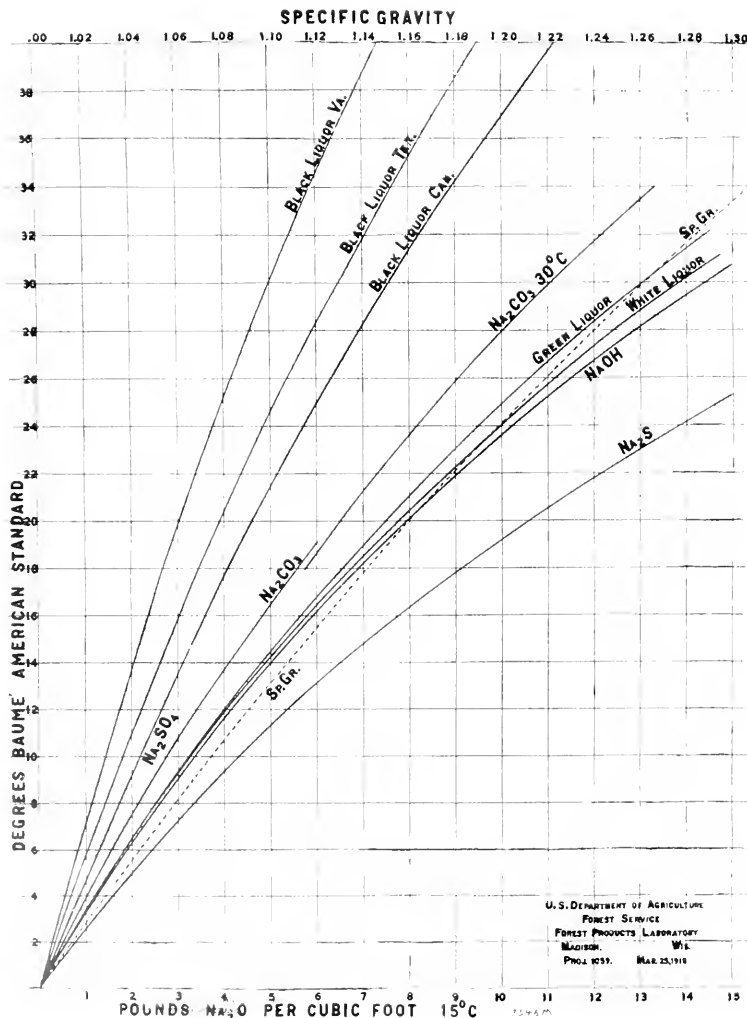
determine the amount of soda, figured as  $\text{Na}_2\text{O}$ , by multiplying the pounds of soda per cubic foot for the density of liquor in the tank by the volume in cubic feet. In case of an unusually long shutdown, correction for temperature should be made.

Three separate curves are given for black liquors, each of which is typical of the liquor obtained from the pulp wood commonly used in the localities indicated. The black liquor from the Virginia mill was obtained from a mixture of scrub, loblolly, and shortleaf pines. The black liquor from the Texas mill was obtained from material which was about 50 per cent slabs and edgings from longleaf pine and 50 per cent cordwood from second growth shortleaf pine. Black liquor from the Canadian mill was obtained from spruce and balsam.

Each mill should determine the typical curve for its own black liquor.

The curves for green liquor and white liquor will not vary much in different mills where the usual methods of soda recovery are used. The curves for sodium carbonate and caustic soda are applicable to the liquors of soda pulp mills. The curve for sodium sulphate coincides up to the break (which is the point of saturation at 15 degrees) with the curve for the black liquor of a Canadian mill.

Abscissae indicated at the top of the graph are to be used with the specific gravity curve in converting degrees Baume to specific gravity. The abscissae to be used for all the other curves are written at the bottom of the graph as pounds per cubic foot.—Technical Notes, U. S. Trust Products Laboratory.



# PULP AND PAPER NEWS



The Ratcliff Paper Co., Limited, of Toronto, have started an attractive advertising campaign in the Toronto press under the heading "Interesting Facts About Paper."

Another newspaper merger has just taken place in Kitchener. The News-Record Limited, and Rittinger and Motz, Limited, have merged their businesses, including their respective newspapers, the Daily News-Record and the Ontario Journal, a weekly publication. Each paper will continue to be issued under its own name. The stock of W. V. Uttley, managing editor of the News-Record, has been acquired by W. D. Euler, M.P. for North Waterloo and W. J. Motz of the Journal, who have a controlling interest in the amalgamated newspapers.

Georgetown, Ont., which is a busy village with three paper mills and other industries, has recently passed the two thousand mark in population and steps are now being taken toward its incorporation as a town. Georgetown is on the G.T.R. and Toronto Suburban railway, and is supplied with hydro-electric power.

A charter has been granted to National Metal and Waste, Limited, with headquarters in Woodstock, Ont., and a capital stock of \$40,000 to buy, sell and deal in all kinds of merchandise, especially in rags, paper, rubber, etc. Among the incorporators are A. W. Stone, R. A. Stone, M. Cohen, and A. E. Izzard of Woodstock.

An interesting event took place at the Eglinton Presbyterian Church, Toronto, on September 17, when Miss Elma Hamilton, second daughter of Mr. James Logie, the widely known paper mills' representative, Toronto, was married to William C. Doods of Toronto, formerly of Edinburgh, Scotland.

T. H. McDermott, of the Lincoln Paper Mills Co., Toronto, has returned after spending a pleasant holiday at Bobcaygeon, where he thoroughly enjoyed the excellent fishing.

Fred Smith of Smith, Davidson and Wright, Vancouver, B.C., spent a few days in Toronto calling upon the trade on his return from attending the annual meeting of the Canadian Paper Trade Association in Montreal.

George C. Winlow, of the Canada Paper Co., Toronto, who had his McLaughlin car stolen from a garage in Toronto last month, has finally recovered the lost property which was left alongside the road near Kingston in a badly damaged condition. The car was missing for over two weeks.

The Riordan Pulp and Paper Co. are erecting a number of new workmen's houses at Hawkesbury, Ont., a contract for thirty having recently been let. Other houses will be built next year.

The Rolland Paper Co., Limited, of Montreal, have placed two new Canadian paper products on the market in Rolland antique linen and Rolland antique vellum. Both are made on a 20 and 24 pound basis. The former, which is made in white only, is of pleasing and distinctive appearance, and is also strong and durable with a clear, even texture. Both papers are suitable for high class printing or lithographing.

The plant of J. Ford & Co., Portneuf, Que., which was purchased some time ago by Ru-ber-oid Felt Mfg. Co., Limited, who manufacture roofing, carpet and building felts, is very busy at present, having a large number of orders on hand.

The Carter-Crume Co., Ltd., of Toronto, is being wound up. Some eight years ago this company disposed of its sales book business to the American Sales Book Co., Limited, and since that time the Carter-Crume Co. has been a holding company, being owner of the majority of shares in the American Sales Book Co. These shares will now be distributed to the shareholders of the Carter-Crume Co. and the latter organization will go out of existence.

Kinleith Paper Co., Limited, whose mills are at St. Catharines, and head offices in Toronto, recently held an election of officers, owing to the death of W. P. Gundy, President of the company, who passed away some months ago. H. F. E. Kent, who has been vice-president, was elected President; H. H. Love, vice-president; G. H. Jefferson, secretary, and A. G. Parker, treasurer.

Charles V. Syrett, of Toronto, manager of the Victoria Paper and Twine Co., and wife, have returned from a two months' visit to England, Scotland, Ireland and Wales. They had a most enjoyable holiday. It is twenty-five years since Mr. Syrett visited the scenes of his youth in Surrey and Kent counties. While in England he met A. L. Dawe, secretary of the Canadian Pulp and Paper Association, who is now on his way home, and also came in contact with a large number of other Canadians. Everywhere he found great interest manifested in the Dominion and enthusiastic appreciation of the splendid past that Canadians played in the war.

Hon. W. H. Triggs, who is a member of the New Zealand Legislature, and editor of the Christchurch Press, spent a few days in Toronto last week on his return after passing four months in the Old Country and the war areas. He was a spectator at the signing of the Peace Treaty in the Palace of Versailles.

The many friends of T. H. Watson, of Toronto, are congratulating him on being elected a director of the Spanish River Pulp and Paper Mills, which took place at the annual meeting held in Toronto last week. Col. Thomas Gibson, D.S.O., C.M.G., of Toronto, who has been a director and secretary of the company for some years, has returned from overseas and been appointed Vice-President along with P. B. Wilsor of Sault Ste. Marie. Joseph G. Gibson, of Toronto, who has been acting secretary for a considerable period, has been made secretary of the company.

Ellis H. Wilkinson, 76 Bay Street, Toronto, has distributed interesting souvenirs in the shape of very serviceable rulers bearing the metric system and other data. Mr. Wilkinson is the selling agent for water-proof papers, wrappings, twines and toilet tissues.

Ross Keane, who was for many years on the staff of the Stratford Herald, Stratford, previous to serving overseas, has rejoined that paper as managing editor,

and has become a director of the company. Charles Dingman, editor of the Herald, has been elected President and Managing Director.

F. B. Lancaster, who was formerly representative of the Canada Paper Co., Montreal, in the Maritime Provinces, recently resigned, and has formed the Maritime Paper Co., with warehouse and head office in Moncton.

The Nashwaak Pulp and Paper Co., of St. John, have finished their rafting operations on the St. John river and during the past three months about 14,000,000 feet of logs were rafted. This includes not only this year's cut but some of last year's, which was tied up. The booms at the mouth of the Nashwaak river have been closed and a number of the men employed there have been attached to the crew at work on the new concrete dam which the company is erecting at Marysville.

Clarence Hillsmith, of Boston, managing director of the Mattagami Pulp and Paper Co., Smooth Rock Falls, Ont., was in Toronto recently on business. The third digester at the mill is now completed and a new drying machine will be installed in the near future when the digester will be put in operation. The company is turning out about ninety tons a day of unbleached sulphite and making heavy shipments. G. W. Saunders, formerly of the Toronto office, who has been for some months at Smooth Rock Falls, going there when the accounting department was removed from Toronto, is now the Treasurer of the Company. Several new water mains have been laid at Smooth Rock Falls in order to increase the fire protection of the company's plants.

At the annual assembly of the Sovereign Great Priory, Knights Templar, which was held last week in St. John, C. F. Mansel of Toronto, who is sales manager of the Toronto Paper Mfg. Co., was re-elected Grand Treasurer, a position which he has filled most acceptably for many years. Calgary was selected as the next place of meeting.

The vote on the by-law by the ratepayers of Brockville to purchase a site for \$4,500 for the location of the Brockville Paper Manufacturing Co., was practically unanimous in favor of the measure, the total vote in favor of the project being 878, only one being recorded against. The site will be on Woods property on Park Street, North, and the paper company will erect a building, 425 x 65 feet, two stories high with basement. The new industry will give employment to one hundred and fifty hands when in full operation.

#### PULP AND PAPER NEWS IN NOVA SCOTIA.

Several mills have changed hands in the Province during the last year of the War, and shortly after, being sold to American and London parties, large concerns with plenty of capital who can afford to pay for present and prospective enterprises. On the other hand firms crippled and sufferers from death, privations and casualties in the war had to pay the price of sacrifice not only in lives but in material things, so the fine properties of the Campbell Lumber Company of Weymouth passed to the Becker Company, of London as a result of an understanding Captain Glidden Campbell, M. C. had with the Becker Company in London.

Captain Campbell and Mr. Becker met at Halifax in May and the controlling interest passed to the new company.

Beckers of London being a millionaire concern are on taking the property over are rebuilding the

mill, repairing dams and enlarging the productive outfit, making a large outlay. The plant will doubtless be a source of prosperity to the surrounding country in paying large sums of money for pulp and wood and timber and increasing expenditures and production. This concern is the largest importer of ground wood in Great Britain.

The increased acreage and the acquisition of several additional dams which nearly doubled the water of the mill storage capacity, very much enhanced the capacity and value of the property that was bought by the Campbells from the Sissiboo Pulp and Paper Company, in 1901.

The increased value in stumpage alone is an added value to the property, that at the low price at which it changed hands will insure the future of the new Company. The publication by the Forest Service Department of the increased value of wood shows that its value has more than doubled since 1905.

In the mill, the special features of the improvements are the removal of old woodwork and the entire eastern end of the mill and putting in iron trusses and concrete foundations and floors around the grinders. A new grinder line replaces one of the old sets. The new building that replaces the old is broader and higher with more light and better ventilation all of which tends to insure a higher efficiency and increased production.

The mill is at the head of tide water and only three miles from the Company's dock down the river where vessels of considerable size can load for overseas ports. Arrangements for rail shipments are also convenient.

The engineer and architect who planned and constructed the mills in 1912 were both killed in the war one in Belgium, one in France, Lieut. Kenneth A. Campbell of the 42nd battalion, fell at the Vimy Ridge and Lieut. Colin P. Campbell, M. C., after being severely wounded in 1915 and receiving "multiple wounds" in 1916, was killed at Passchendaele—both in 1917. So while they lie where "the purple poppies grow" their works do follow them.

If the Pulp and Paper Magazine were an Art Journal, we should be tempted to publish a picture of the avenue of maples leading to the Disston saw works. This kind of practical forestry makes beautiful towns and also good citizenship.

#### NORTHERN ONTARIO COMING TO ITS OWN.

The rich pulp areas of Northern Ontario and Eastern Quebec are now much in demand. This is especially true of that area along the Ontario and Quebec boundary beginning with Lake Temiskaming and extending into the wilds of the far north. Options have been secured on several pieces of property for the erection of large pulp and paper plants. While the silver and gold interests are marking time owing to the miners' strike the pulp industry is going ahead. The plant of the Kipawa Fibre Co. will be in operation, it is expected, before Christmas and will be turning out about one hundred tons of bleached sulphite a day, while large extensions are being made to the Abitibi Power and Paper Co., which will nearly double the output of newsprint. The development of the Quinze water power at the head of Lake Temiskaming is under construction and the plans call for 100,000 horse power. Another new project is the harnessing of the outlet of Kipawa Lake, and it is believed, when this scheme is completed it will be rated second only to Niagara.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, September 23.—Conditions in the paper business continue good and there is every indication that the fall business will be eminently satisfactory. Newsprint is getting scarcer all the while, and yet some of the large publishers are adopting an attitude as if there was no end of the commodity. Press attacks on the manufacturers have again been launched and the Laurentide Co. has been singled out as a shining mark. Incidentally the impression is conveyed that the Toronto Times and other papers have gone out of business owing to the heavy cost of production. Inferentially the high rate for newsprint is referred to as the principal cause of the suspensions. It is a pleasant delusion, but one which was ably answered by Ed. Beck, acting secretary of the Canadian Pulp and Paper Association, in a recent article, which appeared in the Pulp and Paper Magazine, wherein it was clearly shown that the figure for newsprint had about as much to do with a few Canadian publications dropping out of existence as had the price of gooseberries.

That the Canadian newsprint producers are taking care of the wants of publishers in the Dominion when they could get half as much again for their product sold in the Dominion if exported across the line, counts for naught, and this too, at a time when the trade balance is sadly adverse so far as Canada is concerned. However, the newsprint tangle is going to be straightened up some day and the law of supply and demand will prevail without any hampering restrictions or petty regulations. There is no arbitrary supervision of any other branch of the Canadian paper industry. The result is that mills are all busy and what is more, many of them are making extensions in order to take care of export trade.

A cloud, that is appearing on the horizon so far as the paper mills are concerned, is the bituminous coal situation. The miners are demanding a forty per cent wage increase, a six hour day and five days per week. The outlook for much higher prices will bring home to many plants the difficulties which they were face to face with two years ago, when mills got down to only one and two days' supply. With higher rates for coal,

wages on the increase and other advances in raw materials, it looks as if paper is due for a sharp jump in the not far distant future.

The coating paper industry is one of the busiest at this juncture and one mill is enlarging and will soon run night and day while another is thinking of doubling its capacity and has put on two shifts to catch up with the volume in hand. The mills are importing a great deal of casein from South America and report that the development of the casein industry in Canada has not been as rapid as was expected a few years ago.

There is a fair demand for pulp wood in Ontario and one firm, which has handled fifteen thousand cords this season, reports that the prevailing price in the Parry Sound district is about nine dollars for rough pulp wood on board cars and thirteen to fourteen for peeled wood. In Northern Ontario and Eastern Quebec more wood than ever will be taken out this fall. There is an abundance of labor at most centres and while production costs will be high, there will be no let up in operations.

Book and writing mills are very busy and everything betokens that the volume will keep up all the fall. Kraft is in excellent demand. The sulphite pulp situation remains strong. All the printing establishments throughout the country have been busy with the voters' lists and other jobs and, now that the Victory loan campaign is coming on again, there will be much advertising in the press. Owing to the Ontario Temperance Act referendum, which will be voted upon on October 20, the daily and weekly papers are receiving contracts for a good deal of space from both the temperance forces and the Liberty League. There never was as much paper used in Canada and the United States as there is today and this applies to all kinds. Every magazine that one picks up contains fully twice the number of pages that it did last year, due to the generous amount of advertising being done, while along comes Sir George Bury, with an ardent prophecy regarding the immense future of pulp, not only in the making of paper but in the matter of creating clothes, dishes, car wheels—in fact very nearly everything we use. Sir George even

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES 8311  
8312 MURRAY HILL,  
8313

NEW YORK

Have an extensive  
and steady market  
for

# KRAFT PULP

When you have  
any surplus to  
offer write us

goes so far as to state that pulp will eventually reduce the high cost of living.

No better review of general trade conditions, both present and prospective, has been presented to the industry in the Dominion than was contained in the annual address of John F. Ellis before the Canadian Paper Trade Association. On the whole he took a calm conservative view of things and believed that every jobber would have the banner year in his history. He did not think, in view of the increased cost of raw material, distribution and marketing there was any evidence of a probable decline in prices, but rather of a further raise. Mr. Ellis does not believe, as some predict, that there would be any famine in paper, as many new mills are coming into being and existing ones the making plans for increased production. He told his hearers if the national debt was to be paid, Canada must export more and import less and it is gratifying to think that so many paper manufacturers in the Dominion are doing their part at the present time to help keep the balance of trade in favor of the Dominion. The imports of paper in the Dominion have shown a steady decline and the exports are revealing gratifying gains. Mr. Ellis even went so far as to suggest that the Dominion Government should pass a law prohibiting the export of pulp wood and only the export of the finished article be permitted.

Recently all records were broken at the newsprint plant of the Abitibi Power and Paper Co. at Iroquois Falls, Ont., when 247 tons were turned out in one day. Parts of the new paper making machines are arriving daily at the Falls and, when these are in operation, the output will be increased by about 170 tons daily, making a total production of over 400 tons daily, which will make the largest pulp and paper plant under one roof in the Dominion. A wrapping paper machine will also be installed in the near future. The foundations for the new building to house the four new Walmsley Fourdriniers are now under way and will be completed by the middle of November. The addition which joins the new finishing room built last year, is 269 feet long and 156 feet wide, and the concrete foundations are four feet wide and eleven feet deep. The floor and superstructure are supported on 112 piers of solid concrete, ten of which will support the new paper machines. These ten are eleven feet deep and have a loading capacity of 163 tons each. They are brought up to within a foot of the floor and iron columns resting upon them will be concreted in through the floor to prevent vibration. Twenty piers with a loading capacity of ninety tons each will carry the framework and roof of the building, which will, when finished, form part of the old mill. The engine and rope drives in the present paper mill are being duplicated in the addition.

At the National Industrial Conference held in Ottawa last week Senator Robertson, Chairman of the Conference and Minister of Labor, complained that the headlines in some of the reports of the proceedings appearing in the press were conveying a wrong impression of the strife and bitterness existing. The reports themselves were very fair and accurate but the captions were such as to increase the aggressiveness of some agitators. Senator Robertson stated that it cost the people of Canada \$6,200,000 per year to distribute newspapers throughout the mails and if the people were to pay these millions for accurate information they should have it. He asked that the press co-operate to the fullest extent to this end.

A Toronto concern is circularizing the city to the effect that it is prepared to buy one thousand tons of rags and two thousand tons of paper and books. For mixed rags one cent per lb. and up is offered according to quality; for tailor clips three cents per lb.; newspapers and books, bundled, twenty-five cents per hundred lbs. and, loose, twenty cents per hundred lbs.

### NEW YORK MARKETS.

New York, September, 20.—The threatened steel works strike, scheduled to commence next Monday, and the danger of a tieup of the printing industry in New York City and vicinity by a strike of printers on October 1st, have caused the demand for paper to recede to an extent this week, and the market has not been in quite as lively a condition as recently. Mills have been little affected, however. As previously reported, papermaking plants in the United States are booked so far ahead in orders they could keep operating at maximum production for possibly two months in filling the business already on their ledgers. The slight decrease in demand during the past several days therefore has come as a relief to paper manufacturers, who have continued to run their machines with all the speed possible in an effort to make deliveries on as many orders as they could.

The jobbing trade has been chiefly affected by the easing up of demand. Printers and other consumers have bought in smaller quantities and have seemed somewhat more cautious about stocking up with the strike situation staring them in the face. There is no question that if the printers decide to go out, their action will cripple the publishing and job printing industry in this city, for there are not enough non-union printers in New York to enable employing printers to wage any sort of a fight against the strikers. It is likely, however, that if local print shops are closed down, a large percentage of the printing work usually done here will be taken to other cities, so that the effect of the strike on the consumption of paper should not be great.

The newsprint situation continues to be marked by strength and activity. Publishers are clamoring for additional supplies of paper and demand has attained such proportions that manufacturers simply are not able to cope with it. As an example of the heavy consumption of newsprint at present, one of the leading New York morning newspapers last Sunday printed 526 columns of advertising, which it announced was the largest volume of advertising, it had ever carried in a single issue and which doubtless is more than any other newspaper in the United States has ever carried in one regular issue. Sales of spot lots of newsprint are frequently reported at prices ranging up to 5.50 cents a pound at the mill, while sheets and side runs are fetching relatively as high prices in current sales.

Mills making fine papers are reported to be running full and to be having little or no trouble in marketing all their output. In fact, many writing paper manufacturers are behind in orders, and considerable complaint is heard among jobbers over the delay experienced in obtaining deliveries. Prices on bonds, linens and ledgers are strong and tending upward. Wrapping papers are in good demand and mills are rushed in covering commitments. Quotations are firm and buyers are readily meeting them in their anxiety to secure supplies. Consumers and dealers are stocking up for the pre-holiday trade, which con-



# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.      501 Fifth Avenue, Astor Trust Building      Buenos Aires, Argentine.  
Cor. of 42nd Street  
NEW YORK CITY

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920.      Quotations solicited.

ation of course is creative of a brisk demand for all kinds of wrappings as well as of tissue paper.

The book paper market remains firm, and book mills are in about the same position as newsprint plants, most of them being far behind in deliveries and having their production sold for practically all of this year. Publishers are demanding not only their full contract supplies but are placing orders for additional amounts of paper wherever they are able to do so.

The board market has taken on new life this week. The strike of paper box workers in New York has been practically settled, and with box factories again in operation, they are absorbing increasing amounts of board, so that mills are kept busily engaged in satisfying the wants of customers. Prices are strong at a basis of between \$60 and \$65 per ton of plain chip board.

**GROUND WOOD.** With available supplies of and with demand showing steady growth, prices are working up to levels where they are within close proximity of record-breaking points. No. 1 spruce pulp freshly ground has sold this week in quantities ranging around a thousand tons at a time at \$40 per ton at grinding mills, and consumers have made little objection to paying this high price so long as they received assurance that deliveries would be promptly forthcoming. Manufacturers in the trade who in ordinary times are sellers of ground wood are now seeking to buy, their requirements evidently having assumed such volume that they are not only using all the pulp manufactured by themselves but are finding it necessary to buy in the open market to cover their needs. Dealers report exceptional difficulty in locating pulp for trading purposes and instances are frequently cited where they are obliged to turn down bids at high prices owing to their inability to secure the pulp.

**CHEMICAL PULP.**—Demand for chemical wood pulp has eased up to an extent during the course of the present week, yet the market is attended by a strong undertone and dealers report that they are occasioning no great trouble in disposing of all the supply placed in their hands for sale. Numerous consumers, however, have not inquired as actively as they have in the recent past, and demand has lacked that snap that was such a feature of the market for a time, which would indicate that at least some consuming mills have covered their requirements for a period. Prices are firmly maintained, and producers of sulphite of newsprint quality are said to be refusing to contract for pulp for shipment after October 1st at less than \$75 a ton at the pulp mill. Kraft is moving freely at a basis of around \$90, with board mills absorbing the bulk of supply. Soda pulp is in steady call and spot lots are selling at as much as 5 cents per pound at the mill, while the contract basis ranges about 4.65 cents. Domestic bleached sulphite is in good demand and offered supplies are light, with manufacturers of standard quality sulphite quoting 6 cents a pound. Business in foreign pulps continues to be confined mainly to purchases by consumers in this country for shipment from Norway and Sweden. Prices on the other side remain high, and signs point to their continuing so.

**RAGS.**—The rag market exhibits no important change and business of routine character is passing at fairly steady prices. Mills are not buying in the volume that activity in the new paper market would

seem to warrant, this apparently being due to the fact that many of them are securing appreciably large quantities of rags from foreign sources which enables them to keep out of the domestic market to an extent. Dealers anticipate a market expansion of demand in the near future owing to the assertions of these members of the trade who have been abroad, to the effect that supplies there are diminishing and that only limited lots of rags can be obtained during the next few months in Europe. Prices therefore are maintained and sellers are not hesitating to turn down offers at figures which fail to measure up to their ideas of values. On the other hand, sales are reported from time to time at prices a little lower than are recognized as market quotations, which indicates that some dealers are moving stock at concessions.

**PAPER STOCK.**—Trading in waste paper during the current week has been of moderately broad compass and prices with one or two exceptions have held steady. Demand has been especially good for several grades, including hard white shavings, kraft paper, white blank news and No. 1 mixed paper, whereas soft white shavings, flat stock and folded newspapers have moved in comparatively small volume. No. 1 hard white shavings have sold at 5.25 to 5.50 cents a pound f.o.b. New York, and No. 1 packing of kraft at 3.60 to 3.75 cents. Mixed paper of No. 1 grade has been freely sought by board manufacturers, who have paid between 85 and 90 cents per hundred pounds New York. White blank news has readily commanded 1.75 cents a pound, the high prices quoted on this grade being mainly due to the ground wood situation. Flat stock has continued to ease off in price and sales of heavy books and magazines have been noted at 2.25 cents a pound f.o.b. New York, which figure represents a decline closely approximating \$10 a ton in this kind of paper stock within the past fortnight. Folded news is quotable at 95 cents to \$1 per hundred pounds and No. 1 soft white shavings at around 4.25 cents.

**BAGGING AND ROPE.**—Demand from consuming sources for old rope continues active and prices are well maintained at a basis of between 6.25 and 6.50 cents per pound New York for manila rope in No. 1 condition. Dealers have numerous unfilled orders on their books and are shipping out supplies as soon as they become available. Old bagging, on the other hand, is in rather quiet demand. Important consumers evince a lack of interest in offerings and prices remain on a relatively low level of 5 cents, or a shade higher, for No. 1 serap bagging. Indications are that arrivals of foreign rope are light, while considerable quantities of bagging are being received, which probably accounts for the brisk demand in the domestic market for the former material and the dullness characterizing the latter.

#### NEWS FROM FRANCE.

Becker & Co., the well-known English firm, have changed their Paris house from "The French Paper-stock Co." into "Société Anonyme Française des Pâtes à Papiers, Becker & Co." It has been put in charge of Mr. Pierre A. Barbon, who made himself an enviable reputation in the French air service. He was made Chevalier de la Légion d'Honneur and won the Croix de Guerre with four "palms."

Messrs. Alexander Jacob & Co. of London, England, dealers in old paper, have opened an office in Paris under the management of Mr. David Lévy.—From La Papeterie.

# GRACE & CO., LIMITED

## MONTREAL, QUE.

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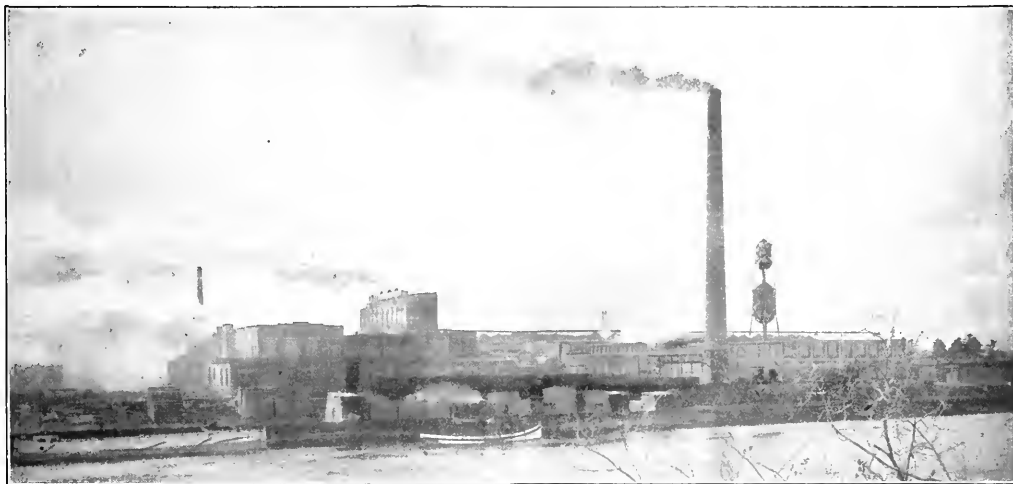
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## PAPER FROM WASTE.

The manufacture of pulp and paper from wood is an industry which has proved itself stable and of increasing magnitude for a number of years, according to W. B. Campbell, B. Sc., in a circular on "Chemical Methods of Utilizing Wood Wastes," issued by the Forestry Branch, Department of the Interior. Almost every kind of wood has been proved suitable for the manufacture of some form of paper, but there are considerations affecting the use of each kind which must always be observed. Most of the pulp is made from the wood cut especially for the purpose, but almost any wood can be used, provided that it is reasonably free from dirt, knots, and bark, or that these can be easily removed from it.

The advantages of waste wood are, of course, its cheapness and its quantity. There are several disadvantages; it is usually green and full of water, has a large percentage of bark, and comes in irregular shape. Shavings are rather better for the purpose, and, if in sufficient quantity, make very good raw material. Another point to be taken care of in using waste material such as this is to use the raw material of only one species, or at least species sufficiently alike that they may respond to the same treatment. For instance, on account of the relatively large content of resin in longleaf pine, it would not do to treat this in the same way as spruce. Neither will it be satisfactory to work hard and soft woods together, in any one treatment, though any of these can be worked satisfactorily if kept separate. The process to be used will depend chiefly on the raw material at hand, and on the market for any particular variety of pulp.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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# EDITORIAL

## OVER THE FENCE.

One of England's greatest poets wrote,—

"There was a man in our town and he was wondrous wise,  
He jumped into a bramble bush and scratched out both  
his eyes."

It is further related that this remarkable individual encountered the bush a second time and in some miraculous fashion regained his eyesight. In the United States and in England at the present time several hundred thousand workmen are idle. They have struck. They have stated their grievances and their demands. Under some circumstances, and if made in another fashion, it is possible that their demands would have been received in a different manner. Under the circumstances of the world at the present time the general public, which is usually the part most affected by labor disturbances, is most interested in seeing goods produced with the greatest regularity and at the lowest price consistent with fairness to all parties concerned with their production, distribution and consumption. The general public has suffered from a number of disturbances for which it has been in no way responsible and is apparently getting tired of being held up so often because one or another of the numerically smaller portions of the population has the power and the opportunity to do so.

It looks as if the general public has come to the conclusion that differences of opinion as to who shall be boss in this or that factory is a matter for the management and men of the plant to decide and that the people generally are not interested in minor matters of policy and do not intend to suffer from family squabbles in this or that industry. Where a distinct injustice is being done, the conscience of an English-speaking nation or community can be appealed to and confidently relied on to see that justice is done. An occasionally isolated instance of mob rule will break out, but such explosions are not representative of the attitude of any English speaking country and revolutions, whether industrial, social or political, are not necessary to obtain justice for anybody, either as an individual or as a class.

From the attitude of the public in certain cities and with the feeling of the population at large, it seems quite evident that there is a limit to public patience and the public sympathy, that there is a bigger thing than the advantage of a single group and that the movement or the policy that counts is the desire to advance the cause of the people and not to promote the selfish advantage of this or that group of individuals.

There has of late been a decided tendency for the management and the workmen in industrial life to appreciate each others problems, responsibilities and obligations and there has been at the same time an apparent tendency for a portion of the community to desire to impose on the people generally the granting of certain special privileges and advantages without getting any return in the form of an acceptance and acknowledgement of the necessary stabilizing assumption of obligations and responsibilities. Until each person individually, or as an organization, accepts and honors his responsibility to the community it will be difficult to arouse any great sympathy in the heart of the public or to enlist the support of the people in a demand for that which is not for the public good. The time is passed when the life and health of women and children can be exploited in an English speaking country to fatten the income of the employer. The time is here when unsanitary conditions and harmful hours of labor will no longer be tolerated. Public opinion is opposed to these things. But the time has not come when the people of this or any other country, except possibly Russia, expect something for nothing. Nor are they ready to pass laws requiring themselves to pay for something they don't get. God gave man brains and strength to use. Both must be usefully employed. There is harm in overwork, but more harm in idleness, which the public pays for.

---

## TURNING DOWN ORDERS.

Almost from the outbreak of the war there has been an increasing effort to induce Canadian manufacturers to take part in the excellent trade possibilities with Great Britain and other countries in which Canadian goods might find an export market. There is no doubt of the existence of such a market nor of the favor with which Canadian goods have been received by customers across the seas. Firms that have endeavoured to place satisfactory goods at a satisfactory price have not only had no difficulty in doing so, but in most cases have been overwhelmed with opportunities.

When domestic demand and the market in the United States failed to absorb quite all of our product there was a decided effort to attract the attention of foreign customers and to get their good will. The situation in Great Britain has been one in which Canadians have naturally been especially interested. During the war it was practically impossible to ship even the goods that were available for export, partly because of the lack of shipping and partly because of import restrictions. While these have been handicaps in the British

market. There has been a fairly steady demand for nearly all grades of Canadian made papers in the United States and other countries which could be reached, although with more or less difficulty.

With the signing of the armistice came the announcement of the British policy of "Empire preference" and Canadian pulp and paper mills were placed in a very favorable position for disposing of all the product they could spare for export and the demand then was by all means satisfied. A number of Canadian mills have established themselves in the British market, either through their own organizations or by making connections with British concerns.

Everything has been apparently moving along smoothly to the obvious advantage of the Canadian manufacturer until the recent change of policy on the other side which opened the doors of British markets to anybody who would come in and thus removed the preferential advantage that Canada had begun to enjoy as a part of the Empire.

It is not within our province to discuss the propriety of this change of policy on the part of the London Government but the change seems to be having an effect on our relations with customers in the Old Country. We occasionally hear rumours of firms that have made arrangements for dealing with English houses and are not giving good service. The customers have come to rely on the Canadian producer for certain goods required. But either because of the change in international trade relationships, due to the withdrawal of the preference idea, or for other reasons, the producer has either come up against competition that he did not expect and consequently has not found quite so much velvet in his path, or, due to an increasing home demand feels more independent of the foreign market. It seems that some mills, having found themselves in the apparently fortunate position of receiving more orders than they could fill have assumed a patronizing attitude toward some of their customers and this feeling seems to be resented.

After having made connections and allowing the customer to assume that he would be provided with material, it is very unfortunate that any mill should consider itself not bound by strict moral obligation to carry on and see the agreement or understanding through to the finish. Disappointments caused by this flitting about like a bee from flower to flower where the honey is easiest to get is not only demoralizing to the relationships at home in the industry, but it puts our country in a very unfortunate position in the eyes of our neighbours and our foreign customers. "British" has always stood for the highest quality of honor in all relations, and "Canadian," both because of our hereditary connections with the Old Country and the traditions that are growing up with this new nation, should demand and get from everyone who does business under the name of Canada the strictest observance of the smallest point of business etiquette as well as the complete

fulfilment of every obligation of business honor. There can be no excuse for a firm turning down a customer who has been accepted in good faith any more than there is an excuse for going back on a friend. If the trouble lies with accepting more business than can possibly be handled or trying to play both ends of the game, then the concern that acts in this way is not truly representative of our Canadian industry. We are sure that most of our mills would rather go out of business than fail to keep an agreement and if there is any tendency on the part of any mill (and we hope there is not) to act in a double-faced manner we trust that such a mill will see the error of its way and that our friends across the sea will not consider them as typical of our industry.

---

#### FIRE PREVENTION DAY.

Fire losses in Canada during 1918 amounted to *over Nineteen Million Dollars*. Isn't that a shameful record? Most of these losses would have been prevented by a little care in using fire and in keeping rubbish away from buildings. October 9th is Fire Prevention Day. Let's make it the beginning of an era of great improvement in this regard.

---

#### COBWEBS.

A. L. Dawe is back from England. In welcoming Mr. Dawe home to his friends and his work we would add a word of appreciation for the capable manner in which Mr. Beck has temporarily filled the position of Secretary of the Canadian Pulp and Paper Association.

---

The next question is, what shall we do with all the daylight we have saved, now that the Daylight Saving Act is about to fade into twilight? The best suggestion we have to offer is to put the equivalent into Victory Loan bonds. They will brighten many years.

---

Talk of a pulp and paper industry in Alaska is heard again. The latest difficulty mentioned is that timber and water power rights are not sufficiently stable nor long-lived to warrant investment in a long time project. One of the advantages of establishing the industry in south-eastern Alaska is the chance for return cargoes to American ports.

---

The Paper Mill Superintendents' Association has made a fine beginning. Sectional meetings have been held by the Michigan and Wisconsin divisions, and a general meeting is being planned for Chicago in the near future. Those who have had the pleasure of attending a meeting of the new association are struck with the enthusiasm shown. We hope it is not the kind that wears off. Proceedings of the meetings are published in "The Paper Industry", of Chicago, of which Peter J. Massey, secretary of the Association, is editor.



# The Efficiency of the News-print Splice

By L. N. Seaman.  
Forest Products' Laboratories of Canada.

Great inconvenience and annoyance are caused in the press room by the breakage of news-print paper at or near the splices made at the paper mills during manufacture, and the foremen of the news-print mills are in turn worried by repeated complaints from the printers that the paper supplied to them does not hold at the splices. These breaks cause loss of material and of time which represent an appreciable item in the expense of production of newspapers.

With the object of finding a way to improve these conditions, an investigation into the efficiency of news-print splices was undertaken at the Forest Products' Laboratories of Canada. The information sought can be divided into three classes: first, has the tissue used to make the splices sufficient adhesive strength for the purpose; second, at what temperature will the iron used for pressing out the splices give the best results; and third, can the same strength per inch be obtained in a splice which extends across a wide sheet of paper as would be indicated by tests of narrow strips cut from the same splice?

Actual methods and conditions were studied both in the press room and the paper mills, and a number of specimens obtained, those from the press room being taken from paper rolls that had broken in the press at or near the splice, and those from the mills from splices made in the ordinary way.

A machine was then designed and built for testing narrow specimens cut from the splices to be examined. This machine is illustrated in Fig. 1. The test strip, one inch wide, is supported by a spring balance of special design, and in turn supports a small vessel into which shot is allowed to run from a funnel at a practically constant rate. As the quantity of shot in this vessel increases the balance is extended till the weight is sufficient to break the specimen, when a ratchet device on the balance holds it extended at the point reached at the moment of fracture. By deducting from this reading of the balance the reading to which it returns when the ratchet is released, the actual breaking stress exerted on the specimen is obtained.

A number of strips one inch wide were tested in this way, the material being taken from the samples obtained from news-print mills and from printing offices. It was found that the splices held in every case—the paper itself breaking. Following these tests a large number of specimens were prepared at these laboratories in order to investigate the various influences affecting the efficiency of the splices.

As it seemed that the probable average pressure used in making the splices commercially was about thirty-five pounds, an ordinary pressing iron as used by tailors was weighted with lead to that extent, and in order to study the effects of various temperatures the iron was fitted with a thermometer-well in which a thermometer stood in a mercury bath. The device is shown in Fig. 2. With this, splices were made at temperatures varying from 50° C. to 200° C. and with splicing tape 3/4 of an inch, and 1 inch wide. The average results are shown in the following table and plotted graphically in Fig. 4.

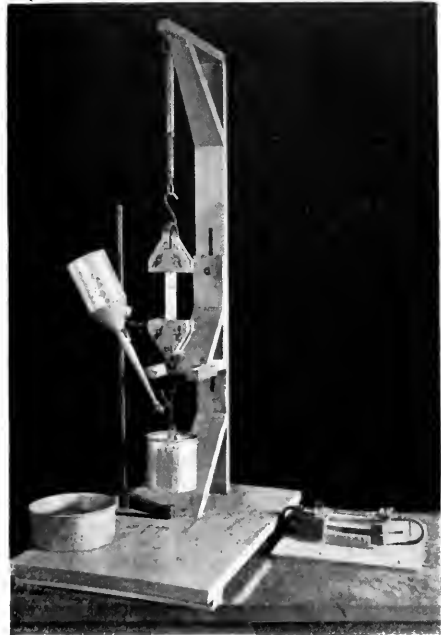


Fig. 1

Iron Temperature	Breaking Load, 1 Inch Strips.		Remarks.
	On 3/4 in. tissue	On 1 in. tissue	
50° C.	..	..	Splices did not hold.
60° C.	..	7.94 lbs.	Paper held up to average load of 8.5 lbs.
70° C.	6.37 lbs.	8.06 "	Paper held up to average load of 9.03 lbs.
80° C.	9.25 "	8.37 "	All splices held, paper breaking.
90° C.	9.25 "	9.19 "	All splices held, paper breaking.
100° C.	8.25 "	8.37 "	" " " "
110° C.	8.87 "	8.31 "	" " " "
120° C.	9.12 "	8.00 "	" " " "
130° C.	9.94 "	9.87 "	" " " "
140° C.	9.44 "	9.06 "	" " " "
150° C.	8.00 "	9.31 "	" " " "
160° C.	7.12 "	7.69 "	" " " "
170° C.	7.87 "	7.50 "	" " " "
200° C.	7.75 "	7.37 "	" " " "

From these results, it would appear, first, that at suitable temperatures of the iron used in making the splice the adhesive strength of the tissue is ample for the purpose, and second, that the best results are obtained at about 130° C. (or about 266° F.). If the iron is allowed to get below about 100° C. there is a probability of the splice failing to hold, while with temperatures above 140° C. the strength of the paper near the splice seems to be impaired.

A number of tests were then made on splices twelve inches wide made at 100° C. with tissue  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in. and 1 in. wide, respectively. The tests were made in a Rondet Schor Textile Testing Machine with special grips as illustrated in Fig. 3. Half of these splices were made by moving the iron back and forth along the splice in the ordinary way, and the remainder by allowing the iron to remain stationary on the splice for about ten seconds. The following average results were obtained:

those made with a stationary iron, and that the total strength of a wide splice is in the neighborhood of 12% less than that indicated by tests of narrow specimens, and this difference is probably due to strains set up



Fig. 2.

	Width of tissue.	Breaking load.	Load per inch.	% of average strength shown by tests of one inch specimens.
Stationary iron	$\frac{1}{2}$ in.	80.25 lbs.	6.70	77%
	$\frac{3}{4}$ "	86.42 "	7.20	87%
Moving iron	1 "	83.55 "	7.00	84%
	$\frac{1}{2}$ "	87.74 "	7.30	87%
Moving iron	$\frac{3}{4}$ "	86.42 "	7.20	87%
	1 "	89.94 "	7.50	90%

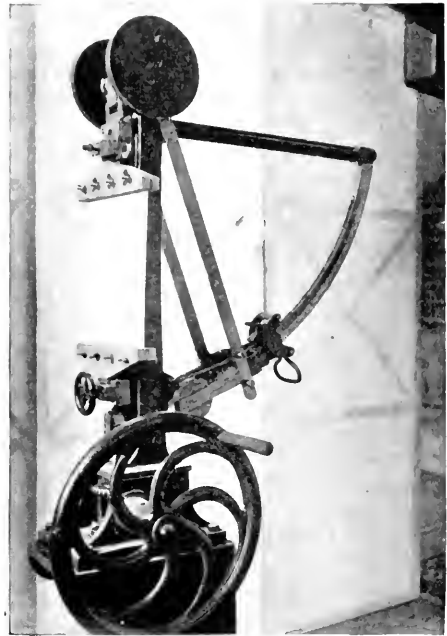


Fig. 3.

In every case the paper broke along a line from three to five inches from the splice.

These results indicate that the splices made by sliding the iron along the paper are at least as strong as

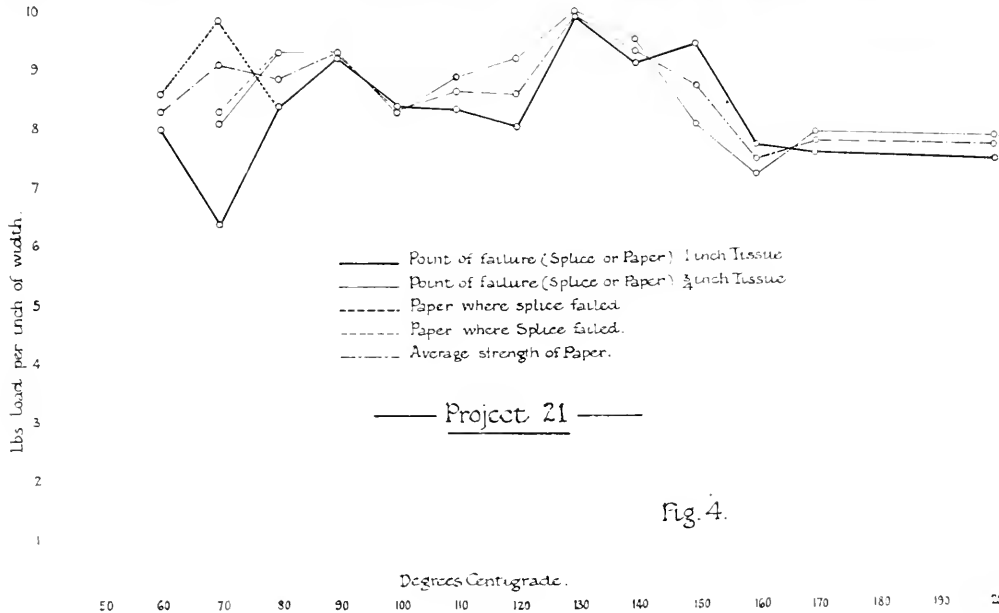


Fig. 4.

Fig. 4.

in the paper by unavoidable unevennesses in the splice. For this reason rolls containing one or more splices should be "flagged" at the splices as an indication to the operator to run his press a little more slowly at these portions of the roll to avoid the danger of a break. At the same time it is evident that carefully made splices, with irons at the proper temperature, will overcome the greater part of the difficulty.

All the above tests were made using ordinary newsprint paper. Further tests were made using stronger paper to determine whether the tissue used possessed a considerable reserve of adhesive strength beyond that necessary for splicing news-print. Several of the stronger grades of paper were experimented with, including Kraft paper and Whatman's drawing paper, but none was found strong enough to cause the splice to part, the paper breaking in every case. Some tests were made using Whatman's drawing paper and tissue that had "aged" till it was difficult to get it into place without crumbling to pieces, but even with this the splices made with an iron at 130° C. held strongly enough to break the paper in most cases.

The following conclusions are drawn from these investigations, though it must be borne in mind that the number of tests was necessarily rather small.

1. The adhesive strength of the tissue, used with an iron at a suitable temperature, is ample for making splices in newsprint paper.

2. The best temperature at which to keep the iron is about 130° C.

3. Splices should be "flagged," though careful manipulation and correct iron temperature remove practically all danger of a break at the splice.

4. The most general causes of breakage of newsprint paper in the press at or near the splices are careless manipulation on the part of employees who make the splices, and unsuitable iron temperatures.

The writer's thanks are extended to Capt. E. P. Cameron for advice and assistance in these investigations, to the Spanish River Pulp and Paper Mills of Sault Ste. Marie, Ontario, and to the Bemis Manufacturing Associates of Watertown, Mass., for material supplied by them.

Mr. Worth did not exaggerate any when he said, "A man is a damn fool to get hurt." It isn't necessary any more. A foreman who orders a man to take risks should be fired.

**PULP COMPANY IN LABRADOR.**

Annapolis, N. S.—Announcement was made here that Captain Daniel Owen, who has just returned from the successful Labrador aerial expedition is to leave Annapolis to assume the presidency of two large companies now being formed. The first company, with a capital of a million dollars is to be a securities company dealing in industrials, and is to have offices in all principal Canadian and American cities. The second company, which is also to be headed by Captain Owen, and which will develop the pulp areas recently explored in Labrador, will have a capital of ten million dollars. Capt. Owen, who before going on active service, was practising law in Annapolis, expects to be demobilized in a few days, and will then proceed to Boston where the executive offices of both companies will be located, although both companies will have Canadian charters. It was learned from Capt Owen that a large Boston banking syndicate headed by the Greene interests, is behind this project, and that already tentative plans had been made for the financing of several important Canadian industrials within the next two or three years. An office will be opened in Halifax in the course of a couple of months, and present plans call for the opening of twenty offices in Canada and the United States before the end of the year. In speaking of the Labrador Pulp Company Captain Owen said that this was unquestionably one of the finest pulp properties in the world for not only are the million and a half acres owned by the company exceptionally heavily covered with spruce, but the property is magnificently watered by several rivers running the entire length of the property. As a result logging and driving the large pulp mills that are contemplated will be very easy. The new company will have their own fleet of steamers, and expect to commence active operations early next spring.

**WRAPPING PAPER WEIGHED WITH FOOD COSTS \$100 FINE.**

Wrapping paper, at 33 cents a pound is not a sufficiently nourishing food product, Judge G. B. Holmes decided in Chicago last week. He imposed a fine of \$100 and costs on E. G. Shinner & Co. for including the wrapping paper while weighing a slab of bacon.

"The people of Chicago pay \$2,000,000 a year for wrapping paper," City Sealer Morris Eller, complaining witness, said. "This money ought to go for food."

**PULP AND PAPER SECURITIES ISSUED IN 1919.**

During the past year there has been great activity in the financing of sound pulp and paper projects. Some of these have been consolidation or refunding issues and some have been new issues for new mills or extensions. The place that the industry now holds in the commercial and financial life of Canada will make these data of general interest. Through the courtesy of the Royal Securities Corporation of Montreal, the following list has been prepared.

COMPANY.	DESCRIPTION	AMOUNT	ISSUED PRICE	YIELD (about)	ISSUED BY.
Riordon Pulp & Paper Co...	6% General Mort. Bonds.	\$4,000,000	{97 and 15% bonus of Kipawa Com- Stock.	6.40	Royal Securities Corp.
Mattagami Pulp & Paper Co.	7% Convertible Mort De- benture Stock.	2,000,000	94	7.50	Royal Securities Corp.
Whalen Pulp & Paper Mills...	6% First and Refunding Mortgage Bonds.	1,500,000	Serial	6.75	Royal Securities Corp.
Donnacona Paper Co.....	6% First Mortgage Bonds.	1,750,000	96½	6.30	Royal Securities Corp.
Fraser Companies, Limited...	6% First Mortgage Bonds.	2,000,000	Serial	6.40	Royal Securities Corp.
Brompton Pulp & Paper Co...	6% Consol'id Mort. Bonds.	1,000,000	91	6.75	Royal Securities Corp.
Howard Smith Paper Mills...	6% First Mortgage Bonds.	800,000	93	6.75	Nesbit, Thompson & Co.
Clarke Bros.....	7% First Mortgage Bonds.	875,000	100 and 20% bonus of common stock	7.00	John Stark & Co.
Saguenay Power & Paper Co.	6½% Collat'l Trust Bonds.	5,500,000	100	6.50	A Montreal Syndicate.

## BRITISH TRADE NEWS

From Our London Correspondent.

London, 15th September, 1919.

There is not much to report as regards new features in the pulp and paper circles of the United Kingdom. The holiday season is on and things have fallen flat. In the paper market prices show no change and the recent advance in quotations for printing papers and writing papers has not been eased in any way. Mills, however, are kept busy on their contracts and orders for the export trade, and considerable attention is being paid to the re-opening of business in the colonies and Dominions overseas. So far only one steamer has left Germany for England; the cargo did not include paper and pulp. One would expect that paper at all events would find its way into the cargo, but there was no success on this occasion. From all accounts that reach me the Germans seem to be having a good time in their publishing houses. I am told by one who recently returned to London that there is plenty of paper of all kinds, so much so that the publishing houses can place books in paper covers on the market cheaper than English houses can sell. The war certainly wakened the Germans as to the value of their paper industry for clothes and sand bags. I have just inspected a bed-sheet which can be purchased in Berlin for 40 marks and one would have to look at it twice before discovering that it was made of paper.

### *Talk of a Boom.*

There is a lot of talk now about a boom in paper, but I am rather reluctant in going so far as to say there is a boom, or that there is likely to be one in the near future. The British mills have not yet got to the speeding-up point and it will be some time before they reach their capacity for fullest output. It is true that pulps are finding their way in large quantities into the mills, but that does not say that the machinery is swallowing up all that arrives. It is usual at this time of the year for millowners to prepare themselves for winter supplies and surplus stocks to cover emergencies, and what is arriving now in pulp cargoes is merely consignments on recent contracts entered into. Look ahead and there is every opportunity for a boom in the paper industry, but in the unsettled state of the European questions not yet adjusted it is greatly to be feared that booms in trade are hanging in the balance. Shipping retards it also and prices are so varied that consumers are out for the cheapest market. Indeed, there is a tendency nowadays to look for the cheapest article. From what I can gather mill owners are organizing their overseas trade now and when that is completed and a sharper demand comes in the home market we may look out for booms.

### *The Worker's Point of View.*

The secretary of the Amalgamated Society of Paper-makers, Mr. W. Dyson, a man who is highly respected from an employers point of view, in his quarterly report has something to say on the outlook of British mills. "We may rest assured," he says, "that whatever may be our opinions on over-production in normal times there can be no possible chance of us suffering from the effects of over-production for many generations to come. It is only by production, and constantly increasing production that we can hope to regain our export trade, and thereby secure and pay for the imports of those commodities of which we are so much in need. Keeping prices down." That is one of the opinions of

the secretary of a society which has a membership of 2,723 workers. It is not a firebrand society, but one that is respected.

### *British Mills Must Be Up-to-Date.*

Mr. Dyson throws out some more hints, which are interesting, and it is quite evident he has good ground to stand on. He says: "We would at the same time point out that the onus of increasing production does not rest entirely with the worker; the employer must shoulder his share of the responsibility. So far as the paper trade is concerned, it is a well-known fact that there is room for great improvement in the equipment of many mills in this country. There can be very little, if any, excuse for allowing this to continue. These mills must be brought up-to-date, or they must be eventually crushed out of existence. We have in this country the finest engineers in the world." Mr. Dyson here drops a bombshell on some mills. "On the captains of our industry we make no comments. The mills name the men. Our skilled and semi-skilled paper mill workers have few, if any equals, certainly no superiors. Provide the latter with the latest production of the former coupled with fair and reasonable conditions of labor and remuneration. Given these conditions we feel sure the workers will reciprocate and there need not be any fear as to the future of British paper trade." Here we have a statement, from one who knows, that some of the British mills are out of date, and add to this drawback a working week of 44 hours, instead of 66 and 72 hours as formerly, it can be seen that the British mills have not yet reached a position to create a boom or even meet a very great rush on the export trade.

### *Material Markets.*

Sulphite is in fair demand and inquiries for future deliveries are numerous. Prices at present remains unchanged. Business in moist ground wood is steady and quotations firm.

Chemicals continue to be in good demand—particularly sulphur, Caustic soda and bleaching powder prices are inclined to stiffen.

Mineral fillings are slightly dearer and the demand, particularly for china clay, is good compared with June and July.

About 4,842 tons of moist ground wood has been delivered here from Canada.

There is a proposal now on foot to use army motors to alleviate the congestion at the docks.

Dockers have struck at Grimsby and Inningham docks, but the trouble only lasted a few days.

### *Canada's Ambition.*

"Now that the war is over Canada feels that her efforts should be devoted to the development of a larger interchange of trade with the mother country. Canada not only seeks to find markets in Europe, more especially in the United Kingdom, but she has considerable markets to offer British manufacturers." So writes Mr. Lloyd Harris to Sir Horace Marshall, the Lord Mayor of London, who is a paper consumer himself. Mr. Dawe has "had a go" at the London and provincial pulp consumers and paper men.

Facts cannot be driven home too strongly to the British manufacturer and consumer. We want a trade developed with Canada, in paper and pulp, on a greater scale than we have developed the trade in wool between Australia and New Zealand—and that is no small import in these islands since 1900.

# Pulping Quality of American Woods

By Otto Kress, Sidney D. Wells, and Vance P. Edwards.  
Forest Products Laboratory, Madison, Wis.

(Continued from Last Issue.)

**NOBLE FIR**—*Abies nobilis*. Wt. 22 lb. Fibre —.

*Range*—Washington (coast mountains in southwestern part of state; Olympic Mountains on Soldus river; from Mount Baker southward in the Cascade Mountains) to Oregon (Browder Ridge on head waters of McKinzie river in Lane County). Range at present but little known.

*Common Names*—Red Fir (Oreg.); "Larch" (Oreg. lumbermen); Noble Fir (Oreg.); Big tree; Feather Cone Red Fir (Cal. lit.); Noble or Bracted Red Fir (Cal. lit.); Tuck Tuck (Pacific Indians).

### Sulphite Pulp

Yield 1,010 lb. Easily bleached.  
Easily pulped—fair strength—excellent color.  
*Possible Uses*—As a substitute for white spruce.

### Sulphate Pulp

Yield 1,080 lb.  
Character—Good quality of strong pulp.  
*Possible Uses*—Same as white spruce.

### Mechanical Pulp

Yield 1,920 lb.  
Character—Very long strong fibre—good color.  
*Possible Uses*—Same as white spruce.

**RED FIR**—*Abies magnifica*. Wt. 23 lb. Fibre —.

*Range*—Southern Oregon (Cascade Mts.) and California (Mount Shasta and along the western slopes of Sierra Nevada Mountains).

*Common Names*—Red Fir (Cal.); California Red-bark Fir (Cal.); Magnificent Fir (Cal. lit.); California Red Fir (Cal. lit.); Golden Fir (Cal. lit.).

### Sulphite Pulp

Yield 1,080 lb. A little hard to bleach.  
Easily pulped—good strength—fair color.  
*Possible Uses*—As a substitute for white spruce.

### Sulphate Pulp

Yield 1,150 lb.  
Character—Good strong fibre.  
*Possible Uses*—Same as white spruce.

### Mechanical Pulp

Yield 1,915 lb.  
Character—Pinkish color—fair strength.  
*Possible Uses*—As a substitute for white spruce.

**WHITE FIR**—*Abies concolor*. Wt. 22 lb. Fibre 3.5 m.m.

*Range*—Oregon (Siskiyou mountains) to southern California (San Bernardino County); Northern Arizona and New Mexico to Colorado and Utah (Wasatch mountains).

*Common Names*—White Fir (Cal., Idaho, Utah, Colo.); Balsam Fir (Cal., Idaho, Colo.); Silver Fir (Cal.); Balsam (Cal.); White Balsam (Utah); Bastard Pine (Utah); Balsam-tree (Idaho); Black Gum (Utah); California White Fir (Cal.); Colorado White Fir (Cal. lit.); Concolor Silver Fir (Eng. lit.).

### Sulphite Pulp

Yield 950 lb. Easily bleached.  
Easily pulped—good strength—good color.  
*Possible Uses*—As a substitute for white spruce.

### Sulphate Pulp

Yield 1,100 lb.

Character—good strong grade of kraft pulp.

*Possible Uses*—Same as white spruce.

### Mechanical Pulp

Yield 2,010 lb. Satisfactory color—fair strength—good fibre.

*Possible Uses*—Same as white spruce.

**DOUGLAS FIR**—*Pseudotsuga taxifolia*.

Washington and Oregon. Wt. 28 lb. Fibre length 4.4 m.m. Montana and Wyoming—Wt. 25 lb. Fibre —.

*Range*—From the Rocky Mountain region (in United States) and northward to central British Columbia; Pacific Coast.

*Common Names*—Red Fir (Oreg., Wash., Idaho, Utah, Mont., Colo.); Douglas Spruce (Cal., Colo., Mont.); Douglas Fir (Utah, Oreg., Colo.); Yellow Fir (Oreg., Mont. Idaho, Wash.); Spruce (Mont.); Fir (Mont.); Oregon Pine (Cal., Wash., Oreg.); Red Pine (Utah, Idaho, Colo.); Puget Sound Pine (Wash.); Douglas-tree; Cork-barked Douglas Spruce.

### Sulphite Pulp

Yield 850 lb. Difficult to bleach. Hard to pulp.  
Fair strength—poor color.

*Possible Uses*—Few.

### Sulphate Pulp

Yield 1,170 lb.  
Character—Good grade of kraft pulp but not as strong as white spruce.

*Possible Uses*—Similar to white spruce.

**HEMLOCK**—*Tsuga canadensis*. Wt. 24 lb. Fibre 3.0 m.m.

*Range*—Nova Scotia to Minnesota (Carleton County), Wisconsin, Michigan, and southward in the Atlantic region along the mountains to Northern Alabama (Winston county) and Georgia.

*Common Names*—Hemlock (Me., N.H., Vt., Mass., R. I., Conn., N.Y., N.J., Pa., Del., Va., N.C., S.C., Ky., Wis., Mich., Minn., Ohio, Ont.); Hemlock Spruce (Vt., R.I., N.Y., Pa., N.J., W. Va., N.C., S.C., England, cult.); Spruce (Pa., W. Va.); Spruce Pine (Pa., Del., Va., N.C., Ga.) Oh-neh-tah—"Greens on the stick" (N.Y. Indians); Canadian Hemlock (lit.); New England Hemlock (lit.).

### Sulphite Pulp

Yield 1,080 lb. A little hard to bleach.  
Not easily pulped. Good strength—fair color.  
*Possible Uses*—As a substitute for white spruce.

### Sulphate Pulp

Yield 1,150 lb.  
Character—Good strong pulp.  
*Possible Uses*—Similar to white spruce.

### Mechanical Pulp

Yield 2,030 lb.  
Character—Pinkish color—short fibre.  
*Possible Uses*—As a substitute for white spruce.

**WESTERN HEMLOCK**—*Tsuga heterophylla*. Wt. 23 lb. Fibre 2.7 m.m.

*Range*—Alaska to Idaho and Montana and southward (in the Cascade and coast ranges) to California (Marin County).

*Common Names*—Hemlock Spruce (Cal.); Western Hemlock (Cal.); Hemlock (Oreg., Idaho, Wash.); Western Hemlock Spruce (lit.); California Hemlock Spruce; Western Hemlock Fir (Eng.); Prince-Albert's Fir (Eng.); Alaska Pine (Northwestern lumbermen).

*Sulphite Pulp*

Yield 1,050 lb. Easily bleached.  
Easily pulped—good strength—fair color.  
*Possible Uses*—Same as white spruce.

*Sulphate Pulp*

Yield 1,100 lb.  
Character—Good strong fibre.  
*Possible Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 2,160 lb.  
Character—Good strength and fibre grayish color.  
*Possible Uses*—Similar to white spruce.

**TAMARACK**—*Larix laricina*. Wt. 31 lb. Fibre 2.6 m.m.

*Range*—From Newfoundland and Labrador to Northern Pa., northern Indiana, Illinois, central Minnesota, and northward to Hudson Bay (Cape Churchill, Great Bear Lake, and Mackenzie River) in Arctic Circle.

*Common Names*—Larch (Vt., Mass., R.I., Conn., N. Y., N.J., Pa., Del., Wis., Minn., Ohio, Ont.); Tamarack (Me., N.H., Vt., Mass., R.I., N.Y., N.J., Pa., Ind., Ill., Wis., Mich., Minn., Ohio, Ont.); Hackmatack (Me., N.H., Mass., R.I., Del., Ill., Minn., Ont.); American Larch (Vt., Wis., nurserymen); Juniper (Me., N. Bruns. to Hudson Bay); Black Larch (Minn.); Epinette Rouge (Quebec); Kaneh-tous—"The leaves fall" (Indians, N.Y.); Red Larch (Mich.); Haemack (lit.).

*Sulphite Pulp*

Yield 1,270 lb. Difficult to bleach.  
Difficult to pulp—good strength—poor color.  
*Possible Uses*—Low grade wrappings.

*Sulphate Pulp*

Yield 1,400 lb.  
Character—Strong, tough pulp.  
*Possible Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 2,620 lb.  
Character—Short fibered and gray color.  
*Possible Uses*—As a substitute for white spruce.

**WESTERN LARCH**—*Larix occidentalis*. Wt. 28 lb. Fibre 2.6 m.m.

*Range*—Southern British Columbia (south of latitude 53 degrees) and south in the Cascade Mountains to the Columbia River and to western Montana; also in Blue Mountains of Washington and Oregon.

*Common Names*—Tamarack (Oreg.); Hackmatack; Larch (Idaho, Wash., etc.); Red American Larch; Western Tamarack; Western Larch (Eng.); Great Western Larch (Cal. lit.).

*Sulphite Pulp*

Yield 1,200 lb. Difficult to bleach. Difficult to pulp—poor strength and color.  
*Possible Uses*—Low grade wrappings.

*Sulphate Pulp*

Yield 1,290 lb.  
Character—Good quality of kraft fibre.

*Possible Uses*—Same as white spruce.

*Mechanical Pulp*

Yield 2,100 lb.  
Character—Brown color, short fibre and fair strength.

*Possible Uses*—Where a medium quality of groundwood will answer the purpose.

**BLACK PINE**—*Pinus divaricata*. Wt. 24 lb. Fibre 2.5 m.m.

*Range*—New Brunswick to New Hampshire and west through Great Lake and Hudson Bay (southern shores) region to Great Bear Lake, Mackenzie river, and Rocky Mountains; south into northern Maine, northern New York, northern Indiana and Illinois, and central Minnesota.

*Common Names*—Scrub Pine (Me., Vt., N.Y., Wis., Mich., Minn., Ont.); Gray Pine (Vt., Minn., Ont.); Jack Pine (Mich., Minn., Canada); Princess Pine (Ont.); Black Jack Pine (Wis.); Black Pine (Minn.); Cypress (Quebec to Hudson Bay); Canada Horn-cone Pine (Cal. lit.); Chek Pine; Sir Joseph Bank's Pine (Eng.); "Juniper" (Canada); Banksian Pine (lit.).

*Sulphite Pulp*

Yield 1,080 lb. Very difficult to bleach.  
Not easily pulped—fair strength—poor color.  
Pulp shivey and full of pitch.

*Possible Uses*—Mechanical difficulties when running this pulp over the paper machine prevent its use.

*Sulphate Pulp*

Yield 1,150 lb.  
Character—Very strong tough fibre.  
*Possible Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 2,130 lb.  
Character—Gray, somewhat soft, good strength, pitchy, poor finish.  
*Possible Uses*—Medium grades of groundwood.

**LOBLOLLY PINE**—*Pinus taeda*. Wt. 30 lb. Fibre 3.0 m.m.

*Range*—South Atlantic and Gulf States from New Jersey (Cape May), southern Delaware and West Virginia (Wood, Mineral, Hampshire, and Hardy counties) to central Florida (Cape Malabar and Tampa Bay) and west to eastern Texas (Colorado River; in Bastrop County); northward into south eastern Oklahoma, Arkansas, and southern border of middle and west Tennessee.

*Common Names*—Loblolly Pine (Del., Va., N.C., S. C., Ga., Ala., Fla., Miss., La., Tex., Ark.); Oldfield Pine (Del., Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark.); Torch Pine (Eng. lit.); Rosemary Pine (Va., N.C., in part); Slash Pine (Va., N.C., in part); Longschat Pine (Del.); Longshucks (Md., Va.); Black Slash Pine (S.C.); Frankincense Pine (lit.); Short-leaf Pine (Va., N.C., S. C., La.); Bull Pine (Texas and Gulf region); Virginia Pine; Sap Pine (Va., N.C.); Meadow Pine (Fla.); Cornstalk Pine (Va.); Black Pine (Va.); Foxtail Pine (Va., Md.); Indian Pine (Va., N.C.); Spruce Pine (Va., in part); Bastard Pine (Va., N.C.); Yellow Pine (north Ala., N.C.); Swamp Pine (Va., N.C.); Longstraw Pine (Va., N.C., in part).

**Sulphite Pulp**

Yield 1,140 lb. Difficult to bleach.  
Easily pulped—Good strength and color.

*Possible Uses*—As a substitute for white spruce.

**Sulphate Pulp**

Yield 1,420 lb.

Character—Strong but coarse fibre.

*Possible Uses*—Similar to white spruce.

**Mechanical Pulp**

Yield 2,450 lb.

Character—Short fibre and very pitchy.

*Possible Uses*—Only when mixed with better grades of groundwood fibres.

**LODGEPOLE PINE**—*Pinus murrayana*. Wt. 24 lb.  
Fibre 2.3 m.m.

*Range*—From Alaska (Yukon river) and southward through interior British Columbia; the mountains of Washington and Oregon to California (Sierra Nevada Mountains to San Jacinto Mountains); plateau east of the Rocky Mountains (latitude 56) and south through the Rocky Mountain region to New Mexico and northern Arizona. Also Coast region from Alaska to California (Mendocino county).

*Common Names*—Tamarack (Wyo., Utah, Mont., Cal.); Prickly Pine (Utah); White Pine (Mont.); Black Pine (Wyo.); Lodgepole Pine (Wyo., Mont., Idaho); Spruce Pine (Colo., Idaho, Mont.); Tamarack Pine (Cal.); Murray Pine (Cal. lit.); Scrub Pine; Knotty Pine; Sand Pine (Oreg.); Bolander's Pine; Henderson's Pine; North Coast Scrub Pine (Cal. lit.).

**Sulphite Pulp**

Yield 1,080 lb. A little hard to bleach.

Easily pulped. Excellent strength and color.

*Possible Uses*—As a substitute for white spruce.

**Sulphate Pulp**

Yield 1,120 lb.

*Character and Uses*—Same as white spruce.

**Mechanical Pulp**

Yield 2,140 lb.

*Character and Uses*—A little pitchy but otherwise similar to white spruce.

*Note*.—The lodgepole pine which grows in the lowlands in the coastal region is very similar to jack pine. The Rocky Mountain region lodgepole pine, however, contains much less pitch and is to be preferred for sulphite and mechanical pulps.

(To be Continued.)

**PULP WOOD CUTTERS LOST IN THE WOODS.**

Sudbury, Ont., Sept. 30.—About a week ago, Fred Archambault, woods foreman, and Charles and Gloria Martel, left Mile 71, which is seven miles beyond Westree on the Canadian National Railway, for a pulp camp twelve miles inland, where the two last named hoped to secure work. Archambault, who came from near Pembroke, was an experienced woodsman, and there were no fears for their not reaching their destination. Since then no trace whatever has been found of them. Searching parties have been out for days traversing the tangled forest and muskeg in the hope of rescue, but so far without avail. Parties are now out from Bisotasing, on the C.P.R. and from Gogama, on the C.N.R. The two Martel brothers came north from Sudbury. The weather has been wet and cold, and the men had no food with them.

**MORE PAPER EXPORTED, LESS PULP.**

Canadian exports of paper and paper products of all kinds for July show an increase in value of \$1,007,984 as compared with those in July, 1918, although the value of the pulp and pulpwood exported during the month shows a decrease, that of pulpwood alone falling off by \$1,019,357. The details show:

	July	1918.	1919.
Paper, etc. ....	\$3,631,241	\$4,639,225	
Pulp, chem. ....	2,754,010	2,654,333	
Pulp, mech. ....	459,868	436,604	
Totals .....	\$6,845,119	\$7,730,162	
Pulpwood .....	2,253,884	1,234,527	
Totals .....	\$9,099,003	\$8,964,669	

The quantity of newsprint paper, the industry's chief staple, exported during the month amounted to 57,323 tons, valued at \$4,064,303.

For the first four months of the fiscal year exports of paper and paper products show an advance in value of \$3,045,299 as compared with the corresponding period in 1918, and \$6,321,373 as compared with 1917. There was a falling off of \$5,225,530 in the value of chemical pulp exported during the period as compared with the 1918 returns and of \$991,454 as compared with those of 1917. Mechanical pulp also fell off slightly while the value of the pulpwood exported in 1919 was about half that for the same period in 1918, the figures being as follows:

	Four Months:	1917.	1918.	1919
Paper, etc. ....	\$11,211,136	\$14,487,110	\$17,532,409	
Pulp, chem. ....	6,284,843	10,518,919	5,293,389	
Pulp, mech. ....	2,254,064	1,701,773	1,631,201	
Totals .....	\$19,750,043	\$26,707,802	\$24,456,999	
Pulpwood .....	2,591,353	6,232,254	3,260,241	
Totals .....	\$22,341,396	\$32,939,056	\$27,717,240	

**AUDITORS BUSY ON BOOTH BOOKS.**

Important developments which may have a far reaching effect on the Canadian paper trade, especially as to newsprint, appeared to be in the making and seem likely to come to a head at Ottawa when the newsprint probe resumes in session on October 9th. Official notice calling the meeting for this date has been sent out by the Paper Controller, Mr. Robert A. Pringle, K.C., to counsel for the manufacturers and the newspaper publishers.

Representatives of the auditing firm of Clarkson, Gordon and Dilworth, this week began a further investigation of the books of the John R. Booth Company. What this means is a question. At the last session of the inquiry on September 17th, it was mentioned that the Booth costs were not considered by the judges of the Paper Control Tribunal in setting their price of \$66 per ton from July 1st to November 30th, 1918. The further examination of the books of the Booth Company by the official auditors would seem to indicate that the Booth costs were to be further considered as representing a "high cost" mill. If this finally turns out to be so, it seems the sixty-six dollar price as set as a "basis" will go higher for the higher cost periods.

Pending the outcome of the next sitting of the probe mill men at Ottawa were content to sit back and say little or nothing about the outcome of the possible developments which may arise.

## Another Fine Meeting of T.A.P.P.I.

Chicago has seen many large and interesting exhibitions but none of more direct and vital interest to the Pulp and Paper Industry than the Fifth National Exposition of Chemical Industries, in connection with which the Annual Meeting of the Technical Association of the Pulp and Paper Industry was held last week. Judging only by the numbers attending, would justify speaking of the meeting as a decided success. From the importance of the work transacted both in regular sessions and special committee meetings the fall convention will be remembered for a long time. The local Committee on Arrangements under the chairmanship of Thos. H. Savery, Jr., carried out the excellent program in a very satisfactory fashion. The hard work of the committee and the good results they obtained were greatly appreciated by those attending the convention. The courtesy of the Union League Club, Sears, Roebuck & Co., the management of the Fifth National Exposition of Chemical Industries and of the Forest Products laboratories at Madison, Wis., was also appreciated.

President R. S. Hatch presided at the sessions with the exception of one evening session when an important meeting of the Executive Committee prevented his doing so, and J. N. Stephenson was asked to take the chair. The address of welcome was given by Mr. Thos. H. Savery, Jr., for the local committee and Mr. R. S. Kellogg responded. Mr. Kellogg caused considerable amusement by telling some things about Chicago that are not usually included in descriptions of the city prepared for the tourist. Mr. Kellogg was a former resident of the windy city and apparently had facts from first hand knowledge.

Dr. Otto Kress of the U.S. Forest Products Laboratories, reviewed the work done by the laboratories and the Bureau of Plant Industry on the fungi and bacteria that attack and destroy wood pulp. Prof. Acree, of the New York State College of Forestry, mentioned the work done at Syracuse on the same subject. Important results will be forthcoming on this problem if the government and the industry give the proper financial support to the investigation.

The committee on Soda Pulp, instead of the formal report of committees inaugurated an interesting practice when Martin L. Griffin, Chairman, read a very brief paper on the principles and practice involved in washing unbleached soda pulp. This was written entirely with the idea of provoking a discussion and a number of direct questions were asked. The subject was then taken up by many of those present, particularly Geo. K. Spence, O. Bache-Wieg, W. H. Howell, Jr. (who sent comments by correspondence) and others.

Prof. Ralph H. McKee was unable to attend and read his paper on Fuel from Waste Sulphite Liquor so Mr. W. H. Dickerson of Muskegon, Mich., and others spoke on the problem of Waste Sulphite Liquor.

A number of interesting reports were read, which showed that a lot of hard work is being done by the various committees and some definite results are being obtained which will be of great value to the industry.

For the Sulphite Committee, Mr. A. D. Wood, of the Champion Fibre Company gave a very interesting description of the plan of his company for regular weekly inspection of their digesters. The excellent results obtained show that such an inspection is decidedly worth while and a complete report of Mr. Wood's remarks will be published at a later date.

The complimentary dinner at the Union League Club will long be remembered as one of the most enjoyable occasions connected with the meetings of the Technical Association. The dinner was given by the concerns in and around Chicago on Wednesday evening and needless to say there was a very full (complete) attendance. Hon. John Strange presided as toast-maker. Mr. W. E. Worth was the principal speaker and "Safety Work" his topic. Several others were called upon.

On Thursday morning a continuation of the business session was held when the report of the committee on Vocational Education was read by Geo. F. Williamson. This had to do principally with the progress that is being made in the preparation of the Text Books and with the explanation of possible plans for the publication and distribution of the books and the administration of the educational work. It is seldom that members of the association have entered so enthusiastically into the discussion of a report and the many helpful remarks will be of great assistance to the committee in carrying out the large piece of work that has been placed in their hands. The editor explained the present status of the manuscript and it seems likely that publication can be proceeded with about as soon as the committee are able to make definite arrangements for the publication.

Following this session the association adjourned to the Sears Roebuck Company to which they were taken in a special train and where a delightful luncheon was tendered the association by the company. It was pitiful to see the way apparently prosperous and well fed individuals laid away the tender morsels of steak and other good things provided by the hosts. Following the luncheon there was a tour of inspection of the paper machine room, the wall paper plant and other departments of interest to Technical men. The latter part of the afternoon was left free.

At seven on Thursday evening a number of the members and a considerable number of the general public gathered in the Conference Room of the Coliseum. An illustrated address was given by Dr. R. J. Blair of the Forest Products Laboratories of Canada, on Prevention of Decay in the Timber of the Roofs of Pulp and Paper Mills. There was unfortunately not time for a discussion of this interesting paper as the management of the Exposition immediately put on their program of miscellaneous moving pictures. Following Dr. Blair's address members adjourned to the Union League Club for a smoker and entertainment in which several members of the Association took part.

About 75 members of the Association went to Madison on the special sleepers provided and spent Friday in a visit of inspection of the Forest Products Laboratory of the Forest Service, U.S. Department of Agriculture. This is without doubt the finest and most complete experimental pulp and paper mill in the country and the results of investigations made there are of the greatest service to the whole industry.

When not in regular session the members spent a considerable portion of their time in investigating the excellent exhibits at the Chemical Exposition. Among these were a considerable number of direct interest to the paper men. There were a number of exhibits of Canadian products and Canadian opportunities by private concerns, by the Federal Government and by the Provincial Government of Ontario.

Recklessness means taking unnecessary chances where you know there are elements of danger—heedless in the face of danger.



# British Paper Trade Growing

(From Our London Correspondent.)

London, September 14, 1919.

The imports and exports of paper for the month of August show a considerable increase, and it is fully anticipated that when the figures for September are announced the jump will be a material one, owing to all restrictions on paper being removed. According to the Trade Board the imports and exports for last month were as follows:—

	Cwts. 1918.	Cwts. 1919.
Imports . . . . .	119,401	832,092
Imports—8 months . . . . .	1,515,964	3,599,969
Exports . . . . .	37,549	84,879
Exports—8 months . . . . .	411,543	510,509

From these figures it will be seen that during the 8 months, January to August 179,998½ tons of paper of all kinds, valued at £6,375,254, were imported compared with 75,798 1-5 tons, valued at £3,642,674, during the same period in 1918. Comparing August with July last the imports also show a substantial increase, that there is growing consumption of paper today in the United Kingdom. Turning to the exports one can see that the British mills are opening out their markets abroad. From January to August they have exported 25,525½ tons of paper of all kinds valued at £2,726,824, as against 20,577¼ tons, valued at £2,168,858, during the corresponding months in 1918. With better shipping facilities now than existed in 1918, the ratio of increase in exports is small, and not on the same percentage of increase when placed alongside the imports coming into the country.

### Imports of Reel Paper.

Newsprint (and paper on reels) is finding a good outlet here, and the rise in the imports is considerable. Newfoundland still commands the lead in newsprint imports, while large imports are arriving from various places in Canada. The Trade Board figures for reel papers in August are as follows:

	Cwts.
Newfoundland . . . . .	156,710
Sweden . . . . .	51,110
Norway . . . . .	29,429
United States . . . . .	10,334
Canada, etc. . . . .	84,154

These make a total of 311,735 cwts., or 165,867 odd tons valued at £502,399, compared with 5,841 tons, valued at £31,550 during the same month in 1918. Worked out, one can go close to the prices. The values of the reel paper received in August are as follows: Newfoundland, £253,977; Sweden, £73,153; Norway, £42,930; United States, £13,999; Canada and other countries, £118,340. These values are taken from the Custom House returns and are on the Shipping Bills. The total weight of reel paper which has reached the British market since January to the end of August is 500,355½ tons, valued at £1,603,263, compared with 114,238 tons during the corresponding period in 1918, valued at £577,313. It is readily seen that owing to the increased size of newspapers and the springing up of new ones, in addition to a revival in the book and publishing houses, reel paper and newsprint are in good demand and will continue so for some time to come.

### Comparisons.

In order to gauge what the imports and exports are like here, I have turned up some of the figures prior

to the outbreak of war when the greatest competitor in paper imports was Germany, which, up to the end of August was out of the market. Taking 8 months, January to August, in 1914, and comparing the values of that period with the corresponding period in 1919, we get the interesting results as regards the imports only:—

1914.	1919.
£4,751,298	£6,375,254

Here you have depicted the increased cost in production and the great effect war has on an industry like the paper trade.

Turning to the export trade of the British mills for the same period, viz.: January to August, I get the following figures:—

1914.	1919.
£3,144,775	£2,726,824

The reduction for the 1919 period is largely due to the scarcity of labor, many men having been in the army, and also to the shipping scarcity. It will take the British mills some time to get into their 1913 form for export trade. At present the value of the imports is over 4 millions in excess of the exports, and it is difficult to conjecture what they will be like when Germany and Austria get going in the markets. During the war British mills made a determined effort to supplant German papers with English papers in the home market.

### Pulp Imports.

The imports of pulp and papermaking materials for August also show an increase and particulars are as follows: Chemicals, dry bleached, 2,388 tons (1,237 tons for August, 1918); chemical dry unbleached, 36,300 tons (16,571 for August 1918); chemical wet, 1,517 tons; ground wood, dry, 2,123 tons (10,282 tons in Aug. 1918); ground wood, moist, 68,848 tons (9,983 tons in August, 1918); esparto, 5,976 tons (4,202 tons in Aug., 1918). The importations of ground moist were received from the following countries:—Sweden, 15,319 tons; Norway, 30,774 tons; Canada, 12,292 tons; other countries, 10,463 tons.

For the 8 months, January-August, Sweden has sent to British mills 66,114 tons of ground moist, Norway 214,771 tons, Canada 24,732 tons, and other countries 14,562 tons. Canada's eight months' supply is valued at £212,175, Norway's at £1,800,160, and Sweden's at £554,528—totals 320,179 tons from all sources, valued at £2,684,682. In 1914 moist ground wood 50 per cent was selling at £2 5s to £2 7s 6d, c.i.f., but today it is up to £8 15s per ton c.i.f. for prompt delivery.

### Notes.

During August 56,751 tons of millboard and wood pulp boards were imported into England, valued at £183,784.

During the same period 10,131 tons of strawboard were imported at £158,960.

The pulp market continues firm. Chemicals and mineral fillings remain unchanged in values.

September and October are usually two heavy months for the imports of pulps.

Mr. Dawe has been doing good work in London and Mr. Lloyd Harris in a letter to the Lord Mayor of London reminded the citizens and manufacturers of Canada's possibilities and the work of the Commission.

### An Exhibition.

This week there is an international exhibition in London for the confectioner and bakery trades, and some of the paper manufacturers have displayed the products of their mills. There was a notable show by Geo. Church and Co., Ltd., Star Paper Mills, Nunhead Lane,

London, who exhibited a variety of waxed papers, of which they are the manufacturers. These waxed papers are used for covering and packing food stuffs, sweets, etc., and there is no end of a variety. They can be supplied waterproof for export trade. On another stand, Cross & Co., Ltd., exhibited designs of what the paper producer can turn out, such as paper cups, frills, baking cases, etc. Other paper novelties were to be seen and attracted much attention.

#### CONTROLLER PRINGLE'S SIGNIFICANT STATEMENT.

That there is a possibility that a limited control of the pulp and paper industry of Canada may continue for some time yet, was the suggestion contained in a statement to a Toronto paper by R. A. Pringle, K.C., who has been conducting the newsprint inquiry in this country. His remarks are interesting in view of the newsprint hearing to be held next Thursday. Mr. Pringle said that, although assurance had been given that all measures of Government control were temporary, and that with peace conditions the old systems would be restored, there had been a precedent created and Government control might continue to a limited extent, at least so long as conditions remain abnormal. Mr. Pringle himself favors a return to the old policy of "laissez faire," leaving the industry untrammelled to develop itself as it will. He said:

"So far as paper is concerned there are still serious transportation difficulties and the Scandinavian countries are not able to send their product to America as cheaply as they did before the war. But both in Great Britain and in the United States state control was a failure and was abandoned. I think it is a fundamental rule that the state should not interfere in any business or enterprise that may be more economically and effectively carried on by private control, unless its public character makes it necessary. The state should not interfere in prices, rates, wages, hours, or any other matters whose proper settlement can only be found in the quotations on a free and untrammelled market. **The Government has no right to control individual liberty beyond what is necessary for the safety and well-being of society.**

"I think the Government was absolutely justified in assuming control owing to the conditions which arose after the war, but I think they should relinquish control as soon as we get back to normal times and conditions.

"It has been suggested that prices might be kept down by shutting off exports. This would be a disastrous move for the country as the pulp and paper industry is one of the most important Canada has.

"The fixation of profits is an infinitely detailed operation. Wages and other factors are constantly changing; and you no sooner get a price fixed than some of the variable factors move to upset its fairness. I think it is an almost impossible task to fix prices on all commodities. It is a question of fact, to be determined in millions of different cases. We have been passing through abnormal conditions with economic chaos and upheavals in nearly every country in the world. All kinds of suggestions to bring down prices are being tried out, but supply has to catch up with demand."

#### PULP STOCKS IN U.S. MILLS DECREASE.

The following stocks were reported by the Federal Trade Commission as on hand at terminal and delivery points on August 31st in addition to the mill stocks reported below: Newsprint, 1,191 tons; book paper 3,801 tons; wrapping 216 tons; and fine 33 tons.

Mill stocks of hanging and specialties increased slightly during the month. Stocks of all other grades decreased. Mill stocks of all grades combined showed a decrease during August of 17,767 tons. Stocks of all grades reported by manufacturers at the end of August amounted to 245,207 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks aggregating 150,366 tons.

Comparing the stocks on hand at the domestic mills on August 31st with their average daily production based upon the weekly and monthly reports for the 12-months' period ended March 31, 1919, the figures show that:

Newsprint mill stocks equal slightly more than 6 days' average output;

Book paper mill stocks equal slightly less than 12 days' average output;

Paperboard mill stocks equal slightly more than 8 days' average output;

Wrapping paper mill stocks equal slightly more than 21 days' average output;

Bag paper mill stocks equal slightly more than 7 days' average output;

Fine paper mill stocks equal slightly more than 29 days' average output;

Tissue paper mill stocks equal slightly less than 16 days' average output;

Hanging paper mill stocks equal slightly more than 25 days' average output;

Felts and Building paper mill stocks equal slightly less than 9 days' average output.

Miscellaneous paper mill stocks equal slightly less than 31 days' average output.

Total paper mill stocks of all grades equal slightly more than 12 days' average output.

Mill stocks in all but two lines fell off during the month and the total decrease was about 21,000 tons. Last year mill stocks increased during August.

Newsprint is the only grade of which the United States is a heavy importer. All of this tonnage, the value of which amounted to \$3,623,210 for July, 1919, was imported from Canada and Newfoundland. The value of the exports of newsprint in July, 1919, amounted to slightly more than \$500,000, a decrease from June of more than 30 per cent.

Newsprint, book paper and fine paper were the principal grades exported, the combined value amounting to more than two million dollars for July, 1919.

The value of the total imports of all grades was more than 35 per cent greater for July, 1919, than for July, 1918. The value of the total exports for July, 1919, was almost \$700,000 less than the value of the exports for July, 1918, and more than \$500,000 less than the imports for July, 1919.

The German idea is longer working hours and increased production. You have to hand it to the Germans. In a little while they will again have the commercial world by the front hair, and perhaps they will have wit enough to let it go at that.—Chicago Tribune.

That which is past is gone and irrevocable, and wise men have enough to do with things present and to come.

**NEWSPRINT PAPER REVIEW FOR AUGUST.**

The average production of newsprint in American mills, based upon the weekly and monthly reports for the 12 months' period ended March 31, 1919, amounted to 109,876 tons of total print and 99,632 tons of standard news, whereas the actual production amounted to 113,413 tons of total print and 101,875 tons of standard news, says the Federal Trade Commission.

Mill stocks of both standard news and total print decreased during August, 1919.

Reports from 73 mills operating 176 machines, running full or partial time on newsprint paper showed that the total time the machines were idle decreased from 3,745 hours in July to 1,768 hours in August. No lost time due to lack of labor or lack of orders was reported. Repairs accounted for 1,636 hours.

**Imports and Exports.**

The imports and exports of printing paper valued at not above 5 cents per pound (practically all newsprint) and of wood pulp for the month of July, 1919, compared with the month of July, 1918, were as follows:

	July, '19	July, '18
	Net Tons.	Net Tons.
Imports of Newsprint (total)....	51,464	44,809
From Canada & Newfoundland.	51,464	44,809
Exports of Newsprint (total)....	6,798	14,894
To Argentina .....	2,160	3,135
To Brazil .....	776	2,182
To Cuba .....	282	1,134
To United Kingdom .....	169	29
To other countries .....	3,411	8,414
Imports of Ground Wood Pulp (total) .....	18,161	18,778
Imports of Chemical Wood Pulp (total) .....	32,828	37,318
Unbleached Sulphite .....	17,638	24,659
Bleached Sulphite .....	4,400	1,753
Unbleached Sulphate .....	10,296	9,988
Bleached Sulphate .....	494	918
Exports of Domestic Wood Pulp..	2,834	2,912

The imports of newsprint for July, 1919, which were all from Canada and Newfoundland were 6,655 tons greater than for July, 1918. The exports for July, 1919, were 8076 tons less than for July, 1918.

The tonnage to "other countries" under the "Exports of Newsprint for July, 1919," includes 1,920 tons to France, 543 tons to Uruguay, 123 tons to Canada and 55 tons to Mexico.

The imports of mechanically groundwood pulp for July, 1919, were 617 tons less than for July, 1918. The exports of domestic wood pulp were 78 tons less than for July, 1918.

The imports of chemical wood pulp for July, 1919, were 4,490 tons less than the imports for July, 1918. The bulk of this tonnage was unbleached sulphite and sulphate from Canada. The chemical pulp imported from Norway and Sweden in July, 1919, totaled 2,582 tons.

Stocks of rolls decreased slightly during the month of August, 1919. Stocks of sheets also decreased in jobbers' hands.

Commitments reported in the month of August, 1919, to sell roll news were 6,458 tons greater than commitments to buy.

Commitments reported in the month of August, 1919, to sell sheet news were 1,652 tons less than commitments to buy.

Publishers' stocks decreased 4,211 tons during the period, which was counterbalanced in part by an in-

crease of 2,812 tons in the newsprint in transit.

Sixty-five publishing concerns held about 63 per cent of the total stocks at the end of the month.

**Mill Prices to Publishers.**

The weighted average price of contract deliveries from domestic mills to publishers during August, 1919, f.o.b. mill in carload lots for standard news in rolls was \$3,778 per 100 pounds. This weighted average is based upon August deliveries of more than 60,000 tons on contracts involving a total tonnage of more than one million tons of paper manufactured in the United States. These contracts, most of which extend until December 31, 1919, include a few long-term contracts made prior to the war at very low prices.

The weighted average contract price based on deliveries from Canadian mills of more than 23,000 tons of standard roll news in carload lots f.o.b. mill in August, 1919, was \$3,624 per 100 pounds. This weighted average is based upon the August deliveries on contracts involving about 180,000 tons of Canadian paper. The greater number of these are short-term contracts covering the year 1919.

The weighted average market price for August of standard roll news in carload lots f.o.b. mill based upon domestic purchases totaling more than 4,500 tons was \$4,063 per 100 pounds.

**PULP MILL POSSIBLE IN ALASKA.**

B. L. Thane, managing director of the Alaska Gastineau Mining Company, who has been directing a pulp investigation in Alaska during the greater part of the last two years, declared recently following his inspection of the properties of his company at Gastineau canal, that the enactment of the proposed land leasing bill which is now before Congress will mean the early establishment of extensive pulp mills in Alaska. Regarding the possibility of making wood pulp in Southeastern Alaska, Mr. Thane states the opinion that one of the greatest industries, not only in Alaska, but along the Pacific Coast may be developed. "Capital," he said, "is slow to consider investment in this proposition in Alaska for two reasons—first, the attitude of the United States government in regard to water power; this, however, will be corrected in the water power bills now before Congress; second, because of the form of lumber leases which give no definite assurance of what timber costs will be over a period of twenty years, the time required to undertake an investment of this size. However, it now looks as if the forest-service will show a spirit of compromise in its attitude. If paper making is established in various places in Southeastern Alaska, undoubtedly one plant will be placed on Gastineau channel. There is a likelihood that a part of the paper would be transported on ships through the canal direct to Eastern States. This would open up a new line of shipping conditions for Alaska and provide a means for return freight."

**KNOW NOTHING OF PAPER MILL RUMOR.**

Gillies Bros., who recently disposed of their plant in Morristown, N. Y., state that they canot say what ultimate use will be made of the property. As to the probability of a large paper mill being erected there by Wm. Randolph Hearst of New York, they are of the opinion that this is only a newspaper report. Gillies Bros. have not been using the property at Morristown for some years but have their own salesman in northern New York district and distribute direct from their mill at Bareside, Ont.

### INTERLAKE TISSUE MILLS EXPANDING.

Extensive additions to the buildings and equipment of the Interlake Tissue Mills, Merriton, Ont., are now under way in order to take care of the rapidly increasing business of the firm. In conversation with George Carruthers, of Toronto, President of the company, he said that they had just awarded the contract for a second machine, a Harper-Foundrinier, which will be 148 inches wide. This is the widest tissue paper machine in use in America and the output will be from twelve to twenty tons a day, according to the weight of the stock turned out. The machine is now being built by the Dominion Bridge Works, Montreal, and it is expected that it will be installed and in operation by mid-summer next year. Five beaters will also be added to the equipment of the Interlake Tissue Mills, making eight in all, including a Marx double beater. The machine, which is now in operation and has been since 1912, when the mills were built, is an M. G. Foundrinier, 110 inches wide. With the additional Foundrinier the daily capacity of the plant will be about twenty-five tons of tissue and other papers.



GEORGE CARRUTHERS,  
President Interlake Tissue Mills, Ltd.

An extra story is now being added to the finishing room, while an extension, 125 x 100 feet, four stories high, will be built at the beater end of the buildings. Construction has already started, the contract being awarded to W. J. Trimble, of Toronto. The addition will be of brick, steel and reinforced concrete. It may be mentioned that the original mill structure was built to accommodate two machines, one of which has been running since the industry began operations. M. J. C. Bellingham, of Kalamazoo, Mich., formerly of Toronto, who is a widely known paper mill engineer, has prepared the plans and specifications for the present enlargements, which, in addition to those already mentioned, include the erection of a new boiler house, with the latest coal unloading facilities and a new system of railways trackage for bringing in all raw materials for the plant.

It is expected that when the building program under way is completed and the additional installations made, the Interlake Tissue Mills will be in a position, not only to supply a wider range of products for the home market with its ever-growing demand, but also to cater to a fair share of export business. It is the belief

of the management that every Canadian paper mill should endeavor to export a certain percentage of its product with a view to assisting in maintaining a favorable balance in Canada's trade.

### WAYAGAMACK BUYS FOUR MACHINES.

London. A healthy sign of confidence of Canadian manufacturers in the permanence of the export trade is the purchase here of nearly a million dollars worth of new machinery by the Wayagamack Pulp & Paper Company at Three Rivers. The company has placed an order with Bentley & Jackson for four machines for making glazed kraft paper, also beaters and other equipment. This will increase their capacity by about 50 tons daily. It is said the cost is likely to be met from the proceeds of a new issue. The demand for kraft paper in England, where much of the Wayagamack product is sold has increased very much recently and is likely to keep on growing.

### R. J. BLAIR OF F.P.L. A BENEDICT.

On Wednesday evening, Sept. 17, Miss Nellie May Grimes was married to Mr. Roy J. Blair at the home of the bride in Montreal. Mr. Blair is pathologist at the Forest Products Laboratory. After an extended trip to Niagara Falls, Madison, Chicago, Washington, and New York, Mr. and Mrs. Blair will reside in Montreal.

### PAPER STOCKS AND PAPER PRICES.

Discussing the rise in prices of the local paper stocks during the current month, the Royal Securities' publication, "Investment Items," September number, says in part:

"That it should have followed immediately on the decision of the Paper Tribunal to reduce the controlled price of paper in Canada for the period of July to November, 1918, from \$69 per ton to \$66 per ton is interesting, as showing that investors in Canadian pulp and paper securities are too well informed to be disturbed by what might, with a less intelligent clientele, have been represented as a setback to the business. As a matter of fact, the decision, by affording grounds for appeals against the unduly low prices both before and after the period dealt with, was in an important respect favorable to the paper companies. The present strength of the pulp and paper securities, however, is due to much more vital considerations than a few dollars per ton in the domestic market—considerations arising out of the tremendous growth in the world's demand for newsprint, the impoverishment of many sources of supply and the unrivalled capacity of the Canadian mills for clean and satisfactory production.

"A sharp advance in the world's price for newsprint appears to be a certainty of the near future."

### ONE ON SIR GEORGE.

The report from Vancouver of a newspaperman's interview with Sir George Bury quotes the president of the Whalen Pulp and Paper mills as saying: "Sitka spruce, which is used in our mills, makes the strongest and the whitest pulp, equally as strong as the pulp made from linen by the Egyptians in the production of papyrus, the paper which has stood the test of centuries."

The interviewer probably got things twisted as Sir George doubtless knows that papyrus was not made from linen but the Nile reed of that name. In fact, the Egyptians probably used nothing else for paper making.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-3. New sources of paper pulp.** (Pour remédier à la crise du papier.) From a paper read Apr. 7, 1919, before the Académie des Sciences. *Le Papier*, **22**, p. 173 (June, 1919.) Mr. Alfred Le Chatelier, aided by Mr. Coquidé, has studied the possibility of using various grasses which grow in the arid regions of France and in unworked regions of her colonies, with a view to obtaining paper pulp. They cannot be worked according to the same methods as wood, as it would be too costly. The non-cellulose substances of these grasses being much less resistant to the action of chemicals than the non-cellulose substances of wood, they can be treated in open vessels and heated by steam, or even, in tropical countries, merely by solar heat. Small mills can thus be erected at the places where the grasses grow, and the latter cheaply transformed into pulp which is then shipped to the paper mill. The cost of production can be lowered by utilizing for the manufacture of pasteboard and plastics certain parts of the plants which would not yield a pulp of a satisfactory quality for paper making. Special machinery has been devised for this method of obtaining pulp. A.P.—C.

**A-11 K-9 American clays.** **R. E. Roe.** *J. Amer. Ceram. Soc.*, **2** p. 69 (1919), through *J. Soc. Chem. Ind.*, **38**, p. 282A, (1919). American are inferior to English for paper-making. A.P.—C.

**B-10. Exportation of Serbian woods.** (L'exportation des bois de Serbie.) *Le Papier*, **22**, p. 175, (June, 1919.) The free exportation of wood from Serbia, Croatia and Slovakia has just been authorized. The exportation is being done through Ragusa pending the decision as regards the possession of Fiume. The forests in these regions are amongst the finest in the world, and many of them are untouched. France should obtain there the woods which her own forests, damaged as they have been by the war, will be unable to supply for many years to come. A.P.—C.

**E-2. Sulphite-cellulose waste-liquors as fertilizer.** **T. Bokorny.** *Chem. Zeit.*, **43**, p. 64, (1919) through *J. Soc. Chem. Ind.*, **38**, p. 218A, (1919). The spent wash from sulphite spirit distilleries is especially liable to fungus growths, but the addition of 0.5%–1.0% of a mineral acid is sufficient to make the liquid stable. The undiluted spent wash is injurious to plant life, but if no acid has been added a dilution of one to ten makes it harmless. In practical use as a fertilizer the dilution takes place on the land. Spent wash from sulphite spirit distilleries has been used as a fertilizer as a source of carbon nutrition and, with barley, the crop yield was considerably increased. The transport and application of the sulphite liquor may be greatly facilitated by converting it into a dry powder by the Krause process (Fr. patent 460,895; U.S. patents 1,213,659 and 1,213,887). The use of sulphite liquor as a carbonaceous fertilizer is based in the first place on the favorable conditions it offers for the development of fungi whereby the air of the soil and that near the ground becomes charged with carbon dioxide, and in the second place on the direct nutrition afforded to the growing plant by the sugars, organic acids, etc., contained in the liquor.

Nitrogenous nutrition must be supplied from another source. A.P.—C.

**F-5. Process of cooking at low temperatures.** (Procédé pour la fabrication des pâtes de cellulose par cuisson à basses températures.) Fr. patent No. 490,632, granted to Cellulose et Papiers. *Le Papier*, **22**, p. 181, (June, 1919.) In plants which are not highly lignified the non-cellulose compounds are fairly easily soluble in alkali solutions, the lower the temperature at which you work the longer the time and the greater the amount of alkali required. To avoid too great a consumption of alkali or too long a period of cooking, this treatment may be preceded or followed by treatment with an acid oxidising bath, or by treatment with water alone. These double (or triple) treatments are to be recommended for cooks between 100° and 50° C. The proper relation between temperature, amount of alkali, and time required, for any given material, is best determined experimentally. The cooking may be carried out in open vessels, but closed vessels are better. Examples are given showing the adaptability of the process to widely varying conditions. A.P.—C.

**K-2. Recovery of paraffined-paper waste.** *World's Paper Trade Rev.*, through *Le Papier*, **22**, p. 175, (June, 1919.) The paraffin is extracted by means of a suitable mineral oil, from which it can be recovered. The oil remaining on the paper is eliminated by means of steam. A.P.—C.

**K-5. The shredder in pasteboard factories.** (Des cylindres défileurs en cartonnerie.) *Andreyon, La Papeterie*, **41**, p. 13, (May 25, 1919.) Three conditions for the proper working of the rag shredder are: a solidly built cylinder, a highly bevelled bed-plate, and a speed of about 120 R.P.M. If these three conditions are attended to, the machine will work properly and the stock can be sent to the machine without further refining, except when a very high grade product is required. A.P.—C.

**K-12. Controlling the heat in dryers of paper machines.** (Procédé et dispositif pour le réglage du chauffage des cylindres sècheurs des machines à papier.) Fr. patent No. 490,772. Granted to Mare Landraud. *Le Papier*, **22**, p. 185, (June, 1919.) The amount of steam admitted to the dryers is regulated by the dryness of the paper at a given point. The paper passes over two supports, one of which is fixed and the other pivoted at its lower extremity, and each carrying a roll at the upper extremity. The paper draws the movable roll closer to the fixed one to a greater or less extent according to its state of dryness, the two rolls being kept apart by means of a suitable spring. The movable roll is connected by means of a crank, the length of which is adjustable, to the throttle of the valve admitting steam to the dryers. A.P.—C.

**K-23. Parchment paper.** (Papier parcheminé.) *World's Paper Trade Rev.*, through *Le Papier*, **22**, p. 175, (June, 1919.) An English patent covers a process whereby paper is parchmentized by suitable treatment in alkaline thiocyanate solutions, particularly those of Ca, Mg, Sr, and Li. The paper is subjected to the action of the bath under certain conditions, for 30 sec., washed, and dried. A.P.—C.



# UNITED STATES NOTES

When the Northwestern division of the Paper Mill Superintendents' Association gathers for a day's session at Wausau, Mich., on October 4, the members attending will be given a chance to inspect several of the leading paper mills in that district. As part of the program of the meeting there will be talks touching various phases of paper production by D. F. O'Connell, chairman of the sulphite committee; Henry Bert, chairman of the paper box committee, and W. T. Schmidt, of the De Pere mill, American Writing Paper Company. A banquet to the visiting mill superintendents has been arranged for the evening of October 4. The entire national organization of paper mill superintendents is to meet November 6 and 7 at Chicago, so Peter J. Massey, secretary-treasurer of the association has announced.

The Kieckhefer Paper Company of Milwaukee, Wis., is constructing a new plant at Camden, New Jersey, where it proposes to manufacture for direct sale to its eastern consumers fibre containers and folding boxes. The large eastern trade of the firm, particularly with Camden establishments, caused the operation of a branch there to be decided upon. George H. Deacon has been looking after the concern's business in Camden.

A strong protective tariff wall, backed up by a licensing system to prevent German dye interests from flooding the country with their products to the destruction of the American dye industry built up during the war, was voted last Friday by the lower house of Congress. The final vote, 156 to 118, was on strict party lines, the Democrats voting solidly against the measure because of its high tariff. The bill provides a tariff of more than double the amount of the present tariff act. Acting on the belief that the tariff alone will not be an effective bar to the German dye trust, since information placed before the House showed at least \$30,000,000 worth of dyes ready to send to the United States, the House by a vote of 206 to 62, sustained the license system for dye imports. The House, instead of setting up a new board to pass on the question of whether licenses shall be granted to importers of foreign dyes despite the high tariff, conferred this power on the United States Tariff Commission.

The Continental Paper Company is erecting at its plant in Bogota, New Jersey, a yellow-brick smoke-stack, 225 feet high, with the name of the firm inlaid. The new chimney will be the highest brick stack in the Hackensack River Valley.

At their conference held last week at the Hotel Astor, New York City, the board of directors of the National Association of Waste Material Dealers elected the following officers: President, F. W. Reidenbach; first vice-president, James Rosenberg; second vice-president, Henry Lissberger; third vice-president, Ivan Reitler; secretary-treasurer, Charles M. Haskins. With the exception of the secretary who will hold office until March 24, 1922, the terms of these officers end next March when the association holds its annual meeting. One of the matters acted on at the conference was the

adoption of a classification of mixed twines and mixed strings. This was upon the recommendation of stock division committee. Following is the classification settled upon: "Mixed twines shall be packed dry, well baled and shall consist of a mixture of jute and hemp twines, and should not contain more than 15 per cent of sisal, and shall be free of tannery and hide sisal strings and ropes, jute wool strings, tarred sisal and rubbish."

The Manistique Pulp and Paper Company has under way the construction of a new mill at its plant in Manistique, Mich. The building now being erected will be of steel and concrete, 457 feet long and two stories high. It is planned to have the mill ready for operation by March, 1920. Its product will be newsprint and it is proposed to turn out 50 to 55 tons of this daily.

The board of directors of the International Paper Company have declared a regular quarterly dividend of one and one-half per cent on preferred stock, payable October 15.

The Defiance Paper Company of Niagara Falls, N. Y., recently put in operation a new pulp mill adjacent to its wall paper mill. The cost of erecting this new plant was \$100,000. It is electrically driven, 2,000 horse power being used daily to turn the wheels. There are four Pusey and Jones grinders and the very latest model screens and stock thickeners are included in the equipment. The opening of the new mill gave jobs to twenty additional employees.

The pulp mills, one at Memphis, Tenn., and one at Augusta, Georgia, will be built in the immediate future by the Buekeye Cotton Oil Company of Memphis, a subsidiary of the Proctor and Gamble Company of Cincinnati. The cost of each will approximate \$500,000. Chemical cotton pulp manufactured from cotton linters into a high grade half stuff for shipment to northern mills to be made into paper will be the product of the mills, each of which will have a daily capacity of 75 tons.

Mr. Harry S. Mork has resigned as vice-president of Arthur D. Little, Inc., of Cambridge, Mass., and has been elected to the vice-presidency of the Lustron Company of Boston, manufacturers of artificial silk by a process developed in the Little establishment. He will also act as consultant to the Industrial Company of Boston.

## WATERTOWN UNIONS OPPOSE J. T. CAREY.

The candidacy of Jeremiah T. Carey, of Watertown, who is seeking re-election to the presidency of the International Brotherhood of Papermakers, is being strongly opposed by certain members of the Watertown Papermakers' union. Mr. Carey has held the position for the past 13 years and has built a strong organization throughout the entire country. Voting will begin October 1.

George Snyder, of Wisconsin, is out to beat Mr. Carey for the presidency and is said to be conducting an extensive campaign throughout the Western States. Mr. Carey, however, is exceptionally strong in Maine, New Hampshire and the Canadian papermaking districts.

# PULP AND PAPER NEWS

W. H. Saunders, president of Ayrton, Saunders & Co., 24 Hanover St., Liverpool, Eng., was in Toronto during the past week calling upon the paper trade in the interest of paper purchases for the British market. The firm handles large quantities of toilet, tissues, etc.

A. M. Sonnabend, representing the Boston Paper Co., Inc., Boston, was in Montreal during the past week calling upon the trade.

Arthur Doughty, who is a returned soldier and previous to his enlistment was with the Canada Paper Co. at the plant, Windsor Mills, Que., and later in the Montreal office, is now covering the Maritime provinces in the interest of the firm, succeeding F. B. Lancaster, now of the Maritime Paper Co., Moncton. Prior to going on the road, Mr. Doughty had charge of the order department of the Canada Paper Co. in Montreal.

The Scott Paper Co., of Chester, Pa., manufacturers of tissue towels and toilet paper, have, owing to their rapidly growing business in the Dominion, established a Canadian agency with the Martin Sales Agency, 32 Front St. West, Toronto. E. C. Martin, who is owner of the business, was formerly employed by the Scott Paper Co. as sales manager of their Buffalo office. He is a Canadian who is well known to the trade.

A complete stock of "Scottissue" products is now carried in Toronto.

The many friends of George A. Gribble, of Publishers, Limited, Toronto, will sympathize with him in the death of his father, Rev. Canon John Gribble, who was in his eighty-seventh year. Canon Gribble was one of the fathers of the Anglican church in Northeast Ontario and had an active career, retiring from the work of the ministry about three years ago.

The Continental Publishing Co. of Toronto, who are publishers of *Everywoman's World*, and *Everywoman's Needlecraft Companion*, have decided to launch a new magazine, *La Canadienne*, which will be printed in French and published in Montreal. The entire editorial staff will be composed of French-Canadians and the first issue will appear in December. The editor of *La Canadienne* is J. L. K. La Flame, who is one of the best known of French Canadian literary men.

It is expected that the second machine, which the Howard Smith Paper Mills intend installing in their plant at Beauharnois, Que., will be in operation about the end of the year. The trim of the machine is eighty inches and it will bring up production at the plant to about twenty tons a day of high grade papers.

Many friends in the Canadian paper trade were shocked last week to learn of the sudden death in New York of Henry Brophy, vice president of the American News Company. The remains of Mr. Brophy were brought to Montreal for interment.

E. Stewart, Toronto, vice president of the Spruce Falls Pulp and Paper Co., has returned from an extended trip to the Pacific Coast, where he spent several weeks on business in connection with the logging operations of the Canada Timber and Lands Co.

E. W. Backus, president of the Fort Francis Pulp and Paper Co., Fort Frances, Ont., and of the Minnesota and Ontario Power Co., International Falls, Minn., is head of a company which is looking forward to the establishment of an insulite mill at Fort Frances, with a capacity of 50,000 feet daily. The project will be carried out just as soon as satisfactory arrangements can be made concerning timber limits and water power. The company is seeking limits from the government and other concessions, the limits to include the territory drained by Rainy Lake and its tributaries. The power must be arranged with the Minister of Public Works, who has intimated that no work will be done on Long Sault rapids this year, the place from which the power is to be developed.

The directors of the Abitibi Power and Paper Co. paid their annual visit to the plant at Iroquois Falls, Ont., last week and were delighted with the progress made. The party included F. H. Anson, president; Shirley Ogilvie, vice president; Roy Wilson, sec.-treas.; Sir Thomas Tait, Sir Henry Egan, W. A. Black, W. K. George, George E. Challes, and Geo. F. Hardy of New York. The town has been greatly improved, with its paved streets and sidewalks, flowered boulevards and pretty parks. Fifty new houses have just been completed and the types of dwellings are very desirable, being principally of stucco. There is a fine athletic ground, club house, reading room, bowling alleys and other conveniences for the employes, who all appeared contented and happy. The civic improvements have been carried out under the personal direction of a landscape gardener, while the T. and N.O. have built a new station at Iroquois Falls. All departments of the mills were running to capacity and there is no scarcity of help. The foundation of the extension which will house the two new Wabnsley paper machines and the new board machine is completed. The parts of one machine are already on hand and the other is on the way. They will be in operation, it is expected, early next summer.

Supplementary letters patent have been issued to the MacLean Publishing Co., Limited, Toronto, creating four thousand shares of the authorized and unissued capital stock of the company as preference shares. The remaining six thousand shares of the company including shares already issued and outstanding are to be common stock.

Major-General Sir David Watson, proprietor of the Quebec Chronicle, recently entered St. Anne's Military Hospital for treatment of his arm.

It is proposed by the city of Montreal to print a complete ticket of admission to the theatres and moving picture houses. The one ticket would include the civic amusement tax and the inconvenience of patrons buying two separate tickets would be done away with. The patron would pay at the box office the price of admission plus the tax and would receive one ticket, retaining a portion as a seat check. This would ensure the tickets being torn up and save a large amount of checking on the part of the theatre management and

the city, the latter giving the theatres credit for the unused tickets and debiting them with those used.

A charter has been granted to the Canadian and Export Trading Co., Limited, with a capital stock of \$110,000 and headquarters in Toronto. Among the incorporators are Edward J. Swift and George G. Flaxton. The company is empowered to manufacture, purchase, hold and deal in wares and merchandise of all kinds, to act as agents, factors and brokers and to carry on a general publicity and advertising business.

George E. Challes, sales manager of the Riondan Pulp and Paper Co., Montreal, after spending a few days at his home in Toronto, left this week on an extended business trip throughout the middle west States.

The Rolland Paper Company, who have mills at St. Jerome and Mont Rolland, Que., and who are makers of high grade papers, have just put two new products on the market in Rolland antique linen and Rolland antique vellum, which are made on 20 and 24 pound basis.

Graphics, Limited, is a new organization which has just obtained a charter. The capital stock is \$40,000 and the head office is in Toronto. The company is empowered to carry on business as general printers, wood and process engravers, stereotypers, publicity and advertising agents. The incorporators are Horace, Dowsett, Geo. W. Knowling, E. D. Sheeres and Geo. Glendinning Moir.

The Westman Press has been granted incorporation with a capital stock of \$15,000 and headquarters in Toronto. The company is authorized to carry on the business of newspaper proprietors and general publishers. Among the incorporators are L. E. Westman, F. H. McCallum and L. J. Rogers. Mr. Westman is editor and general manager of the Canadian Chemical Journal.

A federal charter has been granted the Nation Publishing Co. with a capital stock of \$20,000 and headquarters in Ottawa, to conduct the business of printers and publishers, as well as book binders, lithographers, engravers, etc. Among the incorporators are D. M. LeBourdais, Geo. B. Kelly, Allan J. Fraser and Roger Methot, all of Ottawa.

The Nashwaak Pulp & Paper Company has installed a chemical laboratory at their plant at St. John, N.B. Mr. House is the chief chemist in charge.

Sir William and Lady Price were in Montreal this week.

#### PULP STOCKS IN U.S. MILLS.

According to the Federal Trade Commission, the total stocks of all grades of pulp in the mills on August 31st amounted to 202,163 tons. Stocks of other than wood pulp and Mitscherlich sulphite increased slightly during the month. There was a decrease during the month in the stocks of all other grades.

Comparing the stock on hand at the domestic pulp mills at the end of the month with their average daily production based on the 9-months' period ended April 30, 1919, the figures show that:

Ground wood mill stocks equal slightly more than 35 days' average output;

News Grade Sulphite mill stocks equal slightly more than 9 days' average output.

Bleached sulphite mill stocks equal slightly less than 5 days' average output.

Easy bleaching sulphite mill stocks equal slightly more than 6 days' average output.

Mitscherlich sulphite mill stocks equal slightly more

than 6 days' average output;

Sulphate mill stocks equal slightly less than 12 days' average output;

Soda pulp mill stocks equal slightly more than 6 days' average output;

Mill stocks of "other than wood pulp" equal slightly more than 11 days' average output.

Total mill stocks of all grades equal slightly more than 19 days' average output.

#### ABITIBI PAID DIVIDEND ARREARS.

The action of the directors of the Abitibi Power and Paper Company in clearing off the entire indebtedness of dividend arrears on the preferred stock amounting to 194 per cent, and the placing of the common stock on a regular dividend basis, furnishes another of a number of industrial romances which have occurred in Canada during the past few years. The dividend payment amounts to \$192,500. The common dividend is at the rate of 6 per cent per annum.

The Abitibi Power and Pulp project had its beginning in 1913, though it was not until 1914 that the plant began operations. It will thus be seen that the company came into being just previous to the greatest upheaval the world has known with its consequent depressing and demoralizing effects on trade of every description throughout the world. However, from the start, the company possessed all the requisities of a successful and profitable pulp and paper manufacturing industry. The directors and officers were imbued with the firmest confidence in the merits of the enterprise and were determined to make it a success. The best available engineering talent was engaged for the preparation of plans and specifications, as well as in connection with water power development, mill construction, and equipment. An abundant supply of pulpwood, deliverable at minimum cost, was assured, while water power privileges adequate for not only contemplated and possible requirements of the company, but also for other industrial and commercial enterprises, were vested in the company with development at a very low cost.

Owing to the fact that the newsprint machines ran for only three and one half months during 1915 no annual statement was published for the year. However, the directors stated that the earnings for the year were sufficient to meet and pay bond and debenture interest besides leaving a margin in excess of the cumulative preferred dividends.

Earnings for 1916 were equivalent to 10 per cent on the common stock, after allowing for a full year's preferred dividend, but before depreciation and writing-off. After meeting interest charges the net profits for the year were approximately \$600,000, a considerable gain over 1915. For depreciation, writing-off, etc., there was appropriated approximately \$365,000, and a balance of \$220,000 was carried forward, leaving the total to the credit of profit and loss at the end of 1916 in the vicinity of \$500,000.

In 1917 the gross sales of the company amounted to \$4,422,757, and in 1918 they had increased to \$5,650,264, while for the current year they are likely to substantially exceed this amount. At the end of December last the company had a profit and loss surplus of \$1,073,000, while the net working capital totalled \$642,174 compared with \$524,084 in 1917.

A party of the directors left Montreal last Wednesday for a visit of inspection to the company's plant and properties.





# The Markets

## CANADIAN TRADE CONDITIONS

Toronto, Sept. 29.—Activity and expansion are the watchwords of the paper business at the present time and mills are doing all the business they can possibly attend to and then some. Nearly every week brings a report that some plant is going to expand and the past few days has brought forth the news that the Wayagamaek Pulp and Paper Co. of Three Rivers, has purchased nearly a million dollars' worth of machinery in England and that the Laurentide Co., of Grand Mere, Que., will install three additional grinder units, each consisting of one 2,800 horse power motor, directly connected to two magazine grinders. The capacity of the groundwood pulp department will be increased to a total of about 400 tons, air dry weight, of groundwood pulp per day. The Wayagamaek Co. will install four new machines, beaters and other equipment. The Howard Smith Paper Mills will in a few months have their second machine in operation at Beauharnois.

Another indication of the development of the pulp and paper business is the announcement of the Dominion Bridge Co., Montreal, that arrangements have been completed at their works for the establishment of an entire plant for the making of paper machines and accessories. All the designs for new machines, for which the company have received contracts and for others which they are figuring on, have been worked out by their own engineers. Other large projects will be gone on with next year. It does not look as if there will be any reduction in the prices of paper making equipment, high as they are, but this is offset by the fact that manufacturers of paper and pulp are of the opinion that the present quotations for their product are likely to continue. The cost of machinery will to a certain extent be counterbalanced by the earning capacity of various plants. One leading Canadian firm, which has just placed an order for 148 inch Harper Four-drummer machine with the Dominion Bridge Works, is convinced that the cost of paper machines will not come down and another organization, which has been holding aloof for a year, has about come to the same conclusion and will, it is understood, go on early in the spring with the erection of a new book and writing plant for which the plans have been prepared for some time.

The greatest activity in the paper line is in news-print and five cents for spot deliveries is not infrequent. One leading mill during the past week turned down an order for many hundred reams of half tone news from a leading publisher because it cannot take aboard any more business. This is mentioned merely as an indication of how the market is shaping up. Advertising with the newspapers and general periodicals was never as brisk as at present and new publishing ventures are being launched every day.

In the book and writing line business continues firm and there is a steady demand for all the better grades of paper. A pretty good business is being done in bond papers so far as port is concerned. With reference to future prices, these will depend on many conditions that might affect the trade and particularly labor, which as every one knows, is rather an uncertain quantity at this juncture and has a direct bearing on cost.

There has been a large quantity of pulpwood cut in Northern Ontario and, according to a report of J. A. Oliver, Crown Timber Agent at Port Arthur, there were taken off during the past season 100,506 cords of pulpwood of which 14,644 cords were from Crown lands and 85,902 from private property. There were also nearly a million ties taken out. An interesting announcement was made last week at a meeting of lumber manufacturers in Toronto, assembled to hear a report from A. C. Manbert, Ontario Timber Commissioner, who has returned from a six months propaganda campaign in the Old Country in the interest of the forest products of the province. The announcement, which came from Hon G. Howard Ferguson, Minister of Lands, Forests and Mines for the province, was to the effect that arrangements were being made by Ontario for larger offices in London and for providing the best facilities and also that in the near future representatives of the industrial, agricultural and productive interests generally of Ontario would be represented permanently overseas by experts who would have complete lines of samples and be in a position to give full information regarding the manufacturing capacity at home, facilities for export and other particulars. The lumber interests will be represented as well as the pulp and paper and other lines.

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# WOOD PULP

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convinced.

The pulp market is now the centre of attention and there is a stiffening in prices. Groundwood pulp is in active requisition and a contract was placed with an Ontario concern during the past week for several hundred tons at \$35 F.O.B. mill. Many paper mills, owing to shortage of water, are in the market for mechanical pulp and a great deal is being used due to the tremendous output of newsprint. All plants have as much business as they can attend to. In sulphite pulp there is a fair demand for easy bleaching quality, which is selling from \$92 to \$95 and in bleached sulphite some concerns are well sold up in advance. The figure now prevailing is \$120 at mill. Owing to the strong market for high grades of paper, there is a lively call for bleached pulp. Considerable quantities are being exported to Japan and to Europe, and from across the border good business is forthcoming. Encouraging progress is being made on the first 100 ton unit of the Kipawa plant at Temiskaming, Que., which plant will be in operation early in December. It is understood that as soon as the first unit is in working order the company will go right ahead with the putting in of another unit of equal capacity. A large plant, which during the lull in the market last spring, did not make any more sulphite pulp than it could use for its own consumption in newsprint, is once more running its digesters to capacity and is turning out nearly a hundred tons daily above its own requirements and finds no difficulty in disposing of it. Coated paper plants are very busy, toilet and tissue plants are rushed to the limit and box board concerns are struggling to catch up with orders. There is progress all along the line and manufacturing conditions are more favorable than they have been for some time.

Advices have been received from the other side withdrawing more prices on paper and one firm has advanced toilet papers five per cent and still contends that today's prices are lower than today's costs. This shows the trend of the market and what the future will bring forth no one knows. A leading manufacturer expressed it this week, "Any one who would attempt to forecast conditions must be either a mountebank or an egotist." The majority are content to take matters as they come and, with the present unsettled state of world affairs industrially, go ahead, not borrowing unnecessary trouble, but simply doing the duty that lies before them, which is getting out the stocks as fast as possible and endeavoring to keep things on an even keel.

#### Pulp Prices.

	F.O.B. Mill.
Groundwood pulp .....	\$32.00 to \$35.00
Sulphite, news grade .....	\$75.00 to \$80.00
Sulphite, easy bleaching .....	\$92.00 to \$95.00
Sulphite, bleached .....	\$115.00 to \$120.00
Sulphate .....	\$90.00

#### NEW YORK MARKETS.

New York, September 27. Continued firmness characterizes the paper market, and while local merchants report demand to have eased off to an extent during the week—doubtless because of the threatened printers' strike—the resultant letting up in buying by this class of paper consumers—demand at large is as good as it has been in recent weeks. At the present writing it appears that the strike of the printing trades will surely occur on October 1. The several conferences held between representatives of the employing printers and the union leaders have been of no avail, and the workers are making plans to quit their jobs

next Wednesday. If they should, the printing industry in and around New York will be brought practically to a standstill, for there are few non-union printers in this city, and all of the organized men are understood to be strongly in favor of a walkout. What this will mean to the paper market locally is obvious. To the country at large, however, it means little, for New York consumes only a small percentage of the total amount of paper used in the States, and the virtual elimination of this market for a time should have but slight influence on the market as a whole.

The newsprint market rules exceedingly strong and prices tend firmly upward under a brisk demand from various sections for paper. Publishers are placing orders wherever they can induce mills to enter into additional commitments and are not stopping to argue over questions of price in their anxiety to secure supplies. Roll news is selling freely at around 5.25 cents per pound at the mill to transient customers, and some sales have been recorded at as high as 5.50 cents. So pinched are available supplies becoming that it is understood that importers are commencing to bring newsprint in from Sweden to market in this country. One leading import house is reported offering Swedish news at a price basis of about 5.80 cents per pound on the dock, and while it is questionable whether many, if any, orders have been placed as yet, the probabilities are that if present conditions in the domestic market continue much longer, consumers will be obliged to pay this price for imported paper simply as a means of covering their wants.

Book papers of all descriptions are actively sought and are selling at strong prices. Few mills have supplies to offer, having contracted for their output for some time into the future and being unwilling to book business further ahead, so that buyers are experiencing difficulty in securing supplies. Wrappings are moving in a consistent manner and in constantly larger volume. Merchants the country over are preparing for a record-breaking pre-holiday trade and are laying in large stocks of wrapping and tissue papers to make sure their wants are provided for. Mills making these papers are sold far ahead and most of them have withdrawn quotations and decline to accept further orders.

The fine paper market is firm and increasing in activity. Export demand for writing papers shows steady expansion and manufacturers are diverting such amounts of their product as they can spare into foreign channels. Domestic consumers as well are buying heavily, and jobbers acknowledge that regardless of the efforts made they are unable to acquire stocks of mentionable quantity, having practically all their supply sold before shipments are received from mills.

The board market is strong and prices continue to rise. Chip board is selling at \$65 a ton, and, in some cases, at higher levels. Mills are rushed with business and there is still a large demand unsatisfied.

**Ground Wood**—Demand for groundwood pulp shows no abatement and the market is possessed of a very firm undertone. Quotations on spruce pulp of prime quality range from \$35 to \$40 a ton at the producing point, and it can be said that most of the business being done is at the higher rather than at the lower edge of quotational values. Even stored pulp which grinders have had on hand as long as a year is bringing \$35 in current sales, and consumers cannot seem to supply their requirements regardless of the amount of pulp purchased. Indications are that the consumption of ground wood has increased to such an extent that

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Buenos Aires, Argentine

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

to absorb practically all the supply manufacturers and importers have to offer. Prices are firm and the tendency is toward higher levels though no further advancement has been recorded during the past few days. Newsprint sulphite is selling freely at \$70 to \$75 a ton at the pulp mill, soda pulp is fetching \$95 in spot sales, while kraft of domestic make is bringing in the neighborhood of \$90 a ton. It is reported that a recent large shipment of kraft pulp received here from England has been marketed at a price of \$85, which is under the price level quoted on domestic kraft. Apparently this has not affected domestic quotations, for domestic manufacturers continue to name \$90 for standard quality kraft and refuse to entertain orders at lower figures. Several sizable shipments of Scandinavian pulp have been landed at this port during the past few days but as this pulp was already sold it failed to influence the market.

Chemical Pulp Available in the market for the general woodpulp market, and although less abundant is not of as large volume as was noted a short time ago, there is still sufficient demand to influence

to absorb practically all the supply manufacturers and importers have to offer. Prices are firm and the tendency is toward higher levels though no further advancement has been recorded during the past few days. Newsprint sulphite is selling freely at \$70 to \$75 a ton at the pulp mill, soda pulp is fetching \$95 in spot sales, while kraft of domestic make is bringing in the neighborhood of \$90 a ton. It is reported that a recent large shipment of kraft pulp received here from England has been marketed at a price of \$85, which is under the price level quoted on domestic kraft. Apparently this has not affected domestic quotations, for domestic manufacturers continue to name \$90 for standard quality kraft and refuse to entertain orders at lower figures. Several sizable shipments of Scandinavian pulp have been landed at this port during the past few days but as this pulp was already sold it failed to influence the market.

**Rags.** Paper manufacturers continue to neglect cotton rags and the market, viewed as a whole, is in a quiet position, with little business of an important character being transacted. Dealers report making occasional shipments to mills but the aggregate movement of material is of small consequence. The truth of the situation is that foreign rags are arriving in such volume that consumers are enabled to keep out of the domestic market to a greater extent than ordinarily. It is quite common these days for a steamer to arrive at New York from Rotterdam, Bordeaux, Antwerp or other European ports with four to five thousand bales of rags in her cargo, and not all of the foreign rags being received now is suitable only for roofing felt mills. On the contrary, a considerable amount of high-grade stock is coming in and importers are under-selling domestic dealers, which seems to explain the lack of concerted demand for domestic rags. Demand during the present week has been centered on No. 1 white rags, which have sold at around 7.75 cents a pound f.o.b. New York. Repacked thirds and blues have been offered freely at a price basis of around 4.25 cents New York and there have been few takers in evidence. Roofing rags are moving in a limited way at about 2.75 f.o.b. for No. 1 packing and 2.60 to 2.70 cents for No. 2.

**Paper stock**—Some grades of waste paper have been actively sought this week while others have been difficult to sell. Board mills have been the most voluminous buyers and there has accordingly been a good movement of No. 1 mixed paper, folded news and container manilas. Flat stock, on the other hand, has been sadly neglected by manufacturers and prices have again dropped. Shavings have moved in fair quantities and at steady prices. No. 1 mixed paper has sold at \$5 to 90 cents per hundred pounds f.o.b. New York and practically all the supply offered has been absorbed, with board makers still asking for more. Flat folded news is moving at a quotational range of 95 cents to \$1 per hundred pounds, while No. 1 container manilas suitable for board mills are selling at \$1.10 to \$1.20. Heavy books and magazines are offered at around \$2.25 per hundred pounds New York and the probabilities are this grade of old paper could be bought at an even lower price. No. 1 hard white shavings are quoted at \$5.50 New York and No. 1 soft whites at \$4.25. Two of the strongest items in the current trade are white blank newspaper, which, on account of the pinched condition of the ground wood supplies, is in brisk demand and which is readily commanding close to \$2 per hundred pounds, and kraft paper, No. 1 packing of which is selling at \$3.60 to \$3.75.

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OF CANADA

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# EDITORIAL

## CANADIAN FIELDS FOR INDUSTRIAL DEVELOPMENT.

Mr. Price-Green, who is industrial commissioner for the Canadian National Railways and who was in charge of their interesting exhibit showing the industrial possibilities of Canadian natural resources at the Fifth Exposition of Chemical Industries at Chicago, addressed the convention on the subject of our title. Mr. Green stated that one edition of the Chicago Tribune, that city's largest daily, requires the pulp wood from 30 acres of forest to provide the paper on which it is printed. He went on to say that the United States has one-fifteenth of the world's population but consumes one-half the world's production of paper. He added that at the present rate of consumption and destruction by fire, insects, and fungus growths, one is forced to the conclusion that the time is not far distant when a substitute for spruce in the making of newsprint paper will have to be found; one of the most likely sources of supply is the vast amount of straw which at the present time is being wasted in the grain growing areas of the country.

Through the recent agitation for letting up on the embargo on pulpwood cut on crown lands, the public has come to see and appreciate the enviable position that Canada occupies in regard to the possibilities of becoming the world's greatest producer of pulp and woodpulp papers. The rapid rate of consumption, which has resulted in the practical elimination of any chance for developing and extending the paper industry in the United States, forces those thinking at all on the subject to realize that Canada is in the same position now that the Eastern United States was in a few years ago and that Canadian forests are threatened just as surely with extinction, if the methods permitted are followed across the land and persisted in by those who control or operate lumbering and logging operations in the Canadian forests.

It is no crazy notion nor alarmist's cry that our forests are doomed to extinction if the present inroads of fire, fungus, insects, and selfish manipulation are allowed to continue. The result is inevitable and the depletion of our most important natural resource is just as certain as the observation that water runs down hill.

In his enthusiasm for development of the Prairie provinces and the wonderful agricultural possibilities of Canadian soil, Mr. Green predicts a time when waste straw will be the basis for the newsprint paper of the future. It is doubtless true that Canadians will become aroused one day to the fact that an enormous pro-

ductive source of wealth is being wasted through the burning of the enormous piles of grain and flax straw in this country. The utilization of such waste would not only be a great economical asset in the employment that would be provided but, moreover, the income from the by-product of the farm would go a long way toward paying for the fertilizer that should be applied to keep our farms productive. The pulp which is made from straw is about as different in character from woodpulp as it is possible to conceive of two materials made from the same basic substance. The paper made from straw pulp, or even paper containing a very considerable portion of straw pulp, could hardly be thought of as suitable for the printing of newspapers by present methods although from such material could be produced very satisfactory grades of book paper containing the bleached pulp. The unbleached material is the basis for straw paper and boards which find many uses.

One aspect of the straw pulp suggestion is worthy of consideration and application. It is the fact that straw is a crop. When Mr. Green predicts the depletion of our forest resources he fails to consider that pulp wood is just as truly a crop as grain is and in many cases gives promise of even greater return on the investment. The farmer need not feel jealous at this comparison or fear that farm land will be set out in forest trees, because by far the greater part of some provinces is entirely unsuited to agriculture, and, if these lands were definitely reserved for a forest crop, men would not be continually burying themselves and exhausting their energies in futile attempts to raise farm crops on timber soil. It takes only a little consideration to prove the soundness of the proposition that greater use must be made of the opportunities of forestry in this country.

In fact, the future of our industries dependent upon the forest crop lies in the realization that timber is a crop and that provision must be made for raising trees according to scientific methods. It is most gratifying to note the promise of progress in the action that is being taken by several of our pulp and paper companies in co-operating with Federal and Provincial agencies for investigating actual forest conditions so that those affecting the forest crop may be intelligently studied and economically applied. The progress that is being made in a number of important instances is outlined on another page. It is certain that when the public realizes that the forest, whether under state or private ownership must be handled in an intelligent manner so as to insure a continuous crop and ever productive source of raw material, then there

of our future, for the future of our pulp and paper industry and other businesses dependent upon the forest. Without this intelligent and insistent demand of the public for a proper administration of forest resources we may well expect one or two generations of prosperity and then a future of industrial pauperism as far as these industries are concerned.

### CHARACTER IS BASIS FOR EDUCATION.

Winnipeg will be the scene of a very important convention October 20-22nd. The topic will be Character Education in Relation to Canadian citizenship, and without question the convention will result in a permanent movement of far reaching consequences in the development of Canada as a nation of high ideals and responsible citizenship.

Educational programs have been drifting rather noticeably along utilitarian rather than academic lines and the result in a few years will no doubt be a much more efficient nation mechanically and industrially. The so-called practical education program, however, does not definitely provide for the careful development of that soundness of character and appreciation of civic, social, and industrial co-operation and responsibility which is the best basis, in fact the only real basis on which a stable national life can be built.

The movement which is concentrating in the coming convention does not involve casting off the results of years of careful labor in the development of our present educational work but is planned to carry the process a step further and introduce into the early years an element in school education which is intended primarily to develop a higher type of Canadian citizenship rather than to concentrate on the development of greater skill in either manual or mental effort.

A somewhat similar movement with some of these aims has been under way for about two years and the pulp and paper industry has been represented in it in the person of one of the members of the committee which has drawn up a program of definite recommendations for improving educational methods along such lines as would develop in the student, a proper appreciation of his obligations and opportunities as a citizen. A number of important national organizations of technical and business men have already approved of the program which will soon be presented to the various educational authorities.

The two movements are neither conflicting nor contradictory but serve rather to focus the attention and effort of various elements of the community on the need for such improvement as is indicated and suggested by the program referred to. Doubtless the Winnipeg convention will bring forth also some definite recommendations and it is to be hoped that the near future will see gratifying developments in the education of our children boys and girls.

### COBWEBS.

It begins to look as if U. S. A. stands for United Strike Association. Exchange.

The adjustment of the railway difficulties in England will be a relief for many pulp and paper men who send their product to Great Britain. It can be said of Lloyd George, "with all his faults they love him still."

The Germans are getting down to work. In the countries where German competition will be felt the most, the producers of goods are doing everything else. Much has been truthfully said about the efficiency of the Allies that beat the Hun army, but that will not make any more comfortable the position of the country that loses an export market because the Hun gets the goods there first.

The Trade Review of St. John's, Nfld., refers in an editorial to a recent statement of George Cahoon, Jr., president of the Laurentide Company, regarding the company's policy in the matter of reforestation and fire protection. The editorial in the review suggests that it is time to ask what Newfoundland is doing toward fire protection and if they ever intend to start reforestation.

An illustration of the difficulties forced upon some publications in New York by the strike and concerted vacation of certain members of the printing profession, is found in the last issue of the Daily Mill Stock Reporter. This important publication is now appearing in bulletin form, multigraphed on two sides of a single sheet 8 1/2" x 13".

It is gratifying to note that the British Ministry of Shipping is now taking only 40% of the Canadian cargo space, leaving 60% for commercial cargoes. It is not anticipated in London that the movement of the new wheat crop will cause any further restriction. If there is any drop in rates together with the very welcome increase in shipping facilities the Canadian pulp and paper industry will doubtless be able to benefit by shipping a greater quantity of pulp and paper to the British market.

The pressmen's revolt in New York will probably cause a suspension of some 200 periodicals for perhaps three weeks. When the enormous business done by some New York publishers is considered, it will be seen that a very large tonnage of paper is involved. While the grade of paper used is such that Canadian mills are not directly concerned, one cannot but sympathize with the American mills affected. We realize what it means to the publishers and hope a speedy solution can be effected. The International Typographical Union has to be congratulated for its firm stand for an honorable, man to man agreement.



# A Practical View of Sulphite Pulp Manufacturing

By E. SIMONSON.

When a designer is figuring out the different materials of his building, he always plans his foundation and makes sure that this is strong enough to carry the weight of the structure. If it should happen that there is a miscalculation in the figuring of his foundation, he will sooner or later find that there will be something wrong with his building.

After reading this little illustration, the reader will probably ask what this has to do with sulphite pulp manufacturing. But the foregoing remark will be the foundation of this article on sulphite pulp manufacturing, and the first questions we shall draw out of it are these: Is there any foundation for sulphite pulp manufacturing? Is there anything we can build our sulphite pulp manufacturing on and thereby obtain good results and what is it? As an answer to the first question I am sure we all agree, that the foundation of sulphite pulp manufacturing is the acid plant. I do not mean to say that the acid plant is the only reason for poor results in a sulphite mill but it is the foundation, it is the heart of the sulphite pulp mill. It is the deciding factor of poor or good results and as a doctor always determines his sick patient's pulse and temperature, so a sulphite doctor always determines first the acid plant's pulse and temperature—so to speak.

When something is wrong in a sulphite mill, poor quality as well as quantity is produced. The pulp is full of shives and yellow color. A well trained sulphite man will soon tell why it is so, and the first thing he does is to look around the acid plant.

If the acid plant is the heart, or foundation of a sulphite mill, we must therefore, first of all, produce a good quality of acid, in order to produce a first class quality of sulphite pulp. Again, in order to produce a good quality of acid, we must produce a strong gas with a high percentage of  $\text{SO}_2$ , and here, in the quality of this gas, lies the foundation for the bad or good quality of our pulp. From this there arise two questions, which I will try to answer from experience. First—How can we produce a strong gas with a high percentage of  $\text{SO}_2$ , and second—what is the cause of weak gas with a low percentage of  $\text{SO}_2$ ? Before these two questions are answered, I wish to call attention to the old name by remarking that sulphite pulp is what we call chemical pulp, and that a sulphite mill should therefore be adjusted according to the sulphite man's ideas, and not by the master mechanics. In a sulphite mill where I was once, trouble was brewing in the acid plant. I could see it coming pretty fast, and for more than six months I was begging the men in charge of the mechanical end, who also had full power in the mill, to fix up things according to my ways and my ideas, but without results. One day the mill shut down, and when it came to this point, what did this mechanical man say? Well, he said, "I thought everything was all right when the wheels were turning round."

In order to produce a strong gas with a high percentage of  $\text{SO}_2$ , we must carry a high temperature in our sulphur burner, combustion chamber, and cast iron pipe. In order to give the different gases a chance for proper mixing before the gas enters the cooling apparatus there is of course a limit for the temperature of the gas. If the temperature goes too

high, it is natural that an excess of sulphur is carried away with the different gases, before it is mixed or burned together to one gas and before the gas enters the cooler; the consequences are sublimation of sulphur in the cooler.

It is a very easy matter to remedy too high a temperature, but too low a temperature also causes sublimation, and in nine out of ten cases, we shall find that the low temperature is our greatest trouble and one which also causes a low percentage of  $\text{SO}_2$ . Low temperature gives us poor results in our sulphite mill; for that reason, I shall try to point out the cause of our trouble, and the means of prevention from having a high percentage of  $\text{SO}_2$ .

The first thing we must look for, if we would have good results in the acid plant, is a proper and steady speed on our vacuum pump or fan. This speed must be set according to the sulphite man's requirement, or, in other words, according to the temperature he requires.

I have been in sulphite mills where the speed of the drive in the acid plant has changed several times a day, and not the slightest bit of notice or attention has been paid this matter.

Some of the readers will probably think that I am going too far in my statement when I say that a steady speed in the acid plant is just as important as a steady speed on a paper machine, but when we study this from an economical standpoint, we shall find that every time the speed changes in the acid plant, we are losing something in form of quality, quantity, raw materials, and time. The result of an unsteady speed in the acid plant, is an uneven gas and acid, and later in my article, after I have pointed out the evils which are the direct or indirect cause of a low percentage of  $\text{SO}_2$ , I shall show that we may trace 90 per cent of our trouble in the acid plant to variations in speed.

An experienced sulphite pulp man can easily tell by looking into his sulphur burner what kind of gas he is producing, but this is not the proper way. The gas should be tested by the acid maker at least four times on each shift, and the strength of the gas should never be allowed to go lower than 14 per cent or higher than 18 per cent. If a steady gas, say 18 per cent, is produced one day, and is dropping down gradually little by little every day, remember there is something wrong in the acid plant, and if this reduction in the strength of the gas is not attended to, it will not be long before sublimation sets in in the cooler, and probably all through the system. The cause of it may be a leaky cooler, clogging in the acid system or tower, or lost motion in the vacuum pump or fan. If all these things mentioned are found to be in good condition, test the speed, because there is always a cause for trouble and an acid plant is no exception.

Sublimation in the acid plant is a thing which should belong to the past. We have today milk of lime and limestone tower systems, which, if handled right, will give good satisfaction, but they must be operated by men who have experience; not only by men who have had experience in acid making, but also in cooking.

In closing my remarks about the operation of the acid plant, I wish to say that if the acid plant is operated right, and the acid made according to the quality

of pulp required, the foundation of our sulphite mill is laid. The main thing in order to produce a strong gas with high percentage of  $SO_2$  is: never let the cooler, the acid system (or tower), or any pipe leak. Keep on adjusting the speed, the vacuum pump or fan, until a proper temperature for the gas is obtained, and by skillful operation of a well laid out acid plant, the greatest difficulties of sulphite pulp manufacturing are overcome.

The object of this article is to point out especially our weak points and our difficulties in a sulphite mill. I dare say our sulphite pulp manufacturing has not had the same attention as the finished paper product has had, and I have often thought, "Why do we not take a little more interest in our pulp mill?"

Now in connection with the above remarks on the importance of a good foundation, I would like to tell a little home-incident. One day on my way home from town, I saw something which I thought would be fine to eat, and at the same time I was going to be clever and surprise my wife. I came home with this, I straightened myself up, and told her to prepare a fine meal of it. Looking at it, she replied, "It is impossible; it is a second grade stuff and you can, therefore, not get anything else out of it excepting a second grade meal." This gave me a little illustration regarding pulp and paper. I said to myself, "It is possible to make a good meal, if we have a right thing to make it of, but impossible if we are trying to make a good meal of poor material. Likewise with pulp and paper. If we have a good quality of pulp, we can make a good quality of paper. Experience has taught us, also, that the capacity on the paper machine will increase if an even grade of sulphite pulp is used. The Jordan must be set according to the grade of pulp in order to make it work in properly with the ground wood pulp. If, after an hour or two, another grade of sulphite pulp is furnished, another change is necessary. Time is lost and there is likely to be a break on the machine, not to mention a change in the grade of paper. A uniform grade of sulphite pulp can be made if a good grade of acid is made. The foundation is laid, and the next things we have to look out for are steam, wood, and a good cooking system.

The ways of cooking the wood vary; in some mills the man in charge likes to bring the pressure and temperature up as fast as he thinks safe. In such cases, only the quantity is looked out for. The quality and waste of raw materials are not taken into consideration and in a sulphite mill where such a method of cooking is used, we shall find the highest cost in the raw materials used. The wood is one of the biggest items in our pulp producing; we are bound to waste some wood in the wood room, in order to get our pulp clean. We are also bound to waste some in the digesters, in the form of knots and some wood which will not cook, but there is no need of wasting good wood, which could be made into pulp instead of having the half cooked wood run over the screens.

We have learned that without a good system we are practically lost. This refers not only to an industry as a whole, but also to individual parts of the industry. So without a system in our cooking process we are losing money, in the form of low production and raw materials. Moreover, the reputation for quality of the product of the pulp and paper concern is lost.

The quality of steam is also a great factor in our cooking process, and has a great effect on the quality of our sulphite pulp.

I recollect a mill where there were five three-ton and

one ten-ton digesters. We had the same kind of wood, and the same kind of acid, and apparently the same kind of steam, and the same system of cooking for all of them, still I could notice a difference in the quality of the pulp from the five and the one. I was puzzled for awhile over the difference and one day I made a special inspection to find out what caused the difference, and what I found was this: The steam line ran parallel with the top of the small digester, and on the same line was a tee with a line running to the top of the big digester, about twenty-five feet up. I came to this conclusion, that practically all the moisture which follows the steam was passing by over to the small digester, and on account of this we had fairly good dry steam for the big one, which always gave us a whiter color, and a more uniform grade of pulp. Before this I was inclined to believe that the different size of digesters was the same. Speaking from experience we know that a digester of ten to fifteen ton capacity gives a better result than a smaller one, but again we know that wherever the steam pressure is up and down, a change occurs in the cooking process, and where a cooking system is used so that temperature and pressure on the digester during the cooking, and also pressure on the steam boilers can be checked up, we shall soon notice a change in the quality of pulp if the steam pressure has previously been up and down.

The cooks are blamed quite often for not turning out as good pulp as we expected, and sometimes they may be rightly blamed, but in a good many cases superintendents should blame themselves for not giving the cooks a chance to make good pulp by giving them the right materials to make pulp as required, for, as I have said it is impossible to make good things out of poor material. To-day we have recording gauges, both for pressure and temperature, and if we instruct our cooks regarding the way in which we want them to cook, it is up to them to follow our instructions as closely as possible. Moreover, it is up to us to see that it is done. In connection with this remark about cooking, I should like to mention a couple of cases in which the cook should not be blamed.

I have said that the quality and quantity of steam has a great effect on pulp manufacturing in respect to both quality and quantity of pulp. The first case in which the cook should not be blamed is the one in which the steam pressure is low, and very moist, and in such a case the results are a low grade of pulp. I remember that several years ago, when we were steaming the chips before letting the acid into the digester we forgot to drain out the water which had accumulated by condensation of the steam which we had let in through the chips. When we blew the digester, everything seemed to all right, but when we took the cover off the digester we found a pile of pure, hard chips about ten feet high. At first I could not grasp the cause of it, as the rest of the pulp was good, but I found that the reason for it was the fact that the water had been left in the bottom. We should be inclined to believe that the water which had accumulated, and had been left in the bottom of the digester would have evened up with the acid, and made it uniform, but this example gives us a good idea of the effect which a poor quality of steam has on cooking. If the steam pressure goes down, the circulation in the digester slows up, a big quantity of water is carried over with the steam and we shall find a poor grade of sulphite pulp and a lack of uniformity in any pulp, not to mention a good many other poor results.

The second case in which we should excuse the cook, if a poor quality of pulp is turned out, is the one in which the acid is not made for a good grade of pulp. We have probably noticed a kind of coarse, hard, and yellow-colored sulphite pulp and there is of course more than one reason for this, but the one I have mentioned above regarding poor steam, and the one I shall now speak of are two of the chief causes of this grade of sulphite pulp.

All gas from the digesters should be recovered, nothing should be lost, but the nature of the acid made in the acid plant must be made proportional to the gas relieved from the digester or rather the acid must be made thus, so that there is absorbing strength enough in the acid to absorb the gas coming back from the digester, and at the same time be a good quality of cooking acid. (A good cooling capacity is absolutely necessary.) For instance, if the raw acid (as we call it) is made up in such a way that there is little or no absorption strength left for the gas coming from the digesters, the gas will travel through the acid instead of being absorbed by the acid and it is a fact known by all sulphite pulp men, that acid of this nature is a very poor quality, not to say unfit for cooking. During the cooking process with this kind of acid, we shall always notice that the temperature of the digester will rise very rapidly and during the relief of the digesters we are losing the free  $\text{SO}_2$  faster than we would under ordinary conditions, because the acid has lost its cooking power before it ever came into the digester and the consequence is that a coarse, rough and shiny grade of pulp is produced, and a yellow color always follows. In this case, the cook should not be blamed.

The cook is not always blameless, if a poor quality of pulp is turned out, but the cook, and not only the cook but the acid maker, and all, should be guided by a system, because without a system in all of our work we are lost. Even in such a small scale as our housekeeping demands, we must have a system, and now more than ever, when the cost of living is so high. So, we surely need a good practical system in our mills, where labor and materials are higher than ever before. A good many thousands of dollars are saved during the year in the mills where a good practical system is used.

A system, however, is no good, if it is not checked up every day. We all have something to learn in sulphite pulp manufacturing and experience has taught us that the more we study this industry the more interesting it is, and when we are interested we shall also teach our men to be interested, but if we are losing the interest in our work, we may be sure that our men will soon fall in with us on that side.

A good many things could be added to this article, but we have touched the most important things. In closing, however, I would like to make a few remarks regarding the Wood Room and Screen Room.

First—Set the chipper knives for the length of chips required and make the chips as even as possible. Too high a speed on the chipper will cause uneven chips, as well as dull knives. If we have too high speed on our chipper, it is natural that when the first knife has made a cut, the block will not have time to fall back to the disc before the next knife is making the cut, and the consequence is one long and one short chip and also more sawdust.

Sometimes we have noticed a decrease in the capacity of our pulp screens, more often during the warm weather, even when the screens are kept clean and in good condition. If we watch and look up the cause

for the decrease of capacity in our screens, we shall find that one of the chief troubles can be traced back to our acid plant, to lack of cooling capacity, lack of proper speed, poor condition of the vacuum pump or fan and, very often, poor attention and poor judgment in adjusting one thing according to the other.

#### FEDERAL PRINTING BUREAU REDUCED.

Ottawa, Oct. 6—The report of E. F. Slack, Gazette Printing Co.; Eugene Tarte, La Patrie Printing Co.; A. L. Lewis, Southam Printing Co.; the committee investigating the Government Printing Bureau, has been adopted by the Civil Service Commission, and by an order-in-council the Government is giving effect to the committee's recommendations. The committee favors the reduction of the staff at the Government Printing Bureau by 403 persons, and a complete reorganization with new machinery, which it is believed, will considerably reduce the cost of production and increase the efficiency of this institution.

#### RESERVE JUDGMENT IN NEWSPRINT CASE.

New York, October 6—The judges of the Circuit Court of Appeals, after hearing arguments of attorneys for newspaper publishers and the newsprint manufacturers, reserved decision on the question of whether prices of newsprint established by the federal trade commission and in effect since May, 1918, were unfair. Judge Hough presided, with Judge Manton, Ward and Rogers sitting with him.

George W. Wickersham, representing the newspaper publishers, in his argument for a reduction in present prices, in effect since 1918, claimed that prices established by the trade commission were too high. The present price of \$3.75¼ a hundred pounds has been effective since July, 1918. From May 1918, to July, 1918, the price of \$3.63¼ was in effect.

The American Newspaper Publishers' Association seeks to have the price of paper fixed at \$3.50 a hundredweight, and collect a rebate of \$5 a ton on paper purchased at the increased prices set up, by the Federal Trade Commission in May and July, 1918.

Mr. Wickersham sought to have the testimony of Canadian accountants before the Canadian Newsprint Controller brought before the court and asked that a Commission be appointed to take the testimony in Canada. The court also reserved decision on this matter.

He pointed out that the computing costs of newsprint in the United States the costs of a Canadian and American company were used as a basis for figuring prices. The Spanish River Pulp and Paper Company was the Canadian company and the International Paper Co., the American company. Mr. Wickersham's contention was that testimony before the Canadian Newsprint Controller showed that the Federal Trade Commission's estimate of Canadian costs of manufacture were not warranted.

Henry A. Wise, on behalf of the manufacturers argued that the publishers should have brought the Canadian figures to the notice of the Federal Trade Commission while the hearings were in progress. He stated that the costs of the International Paper Co. and the Spanish River Pulp and Paper Co. were representative of the costs in the two countries, inasmuch as they jointly produced 1,700 tons of newsprint daily out of a total for all the mills on the North American continent of 6,000 tons. It was brought out that the International Paper Co. is producing in the neighborhood of 1,200 tons of newsprint daily.

## BRITISH TRADE NEWS

From Our London Correspondent.

London, Sept. 25, 1919.

One of the wood pulp carrying boats between Norway and Newcastle-on-Tyne turned turtle on Sunday morning last and a valuable cargo of pulp was lost. There were a crew of 19 on board and two women passengers. As the vessel, which is named the "Hartense Lea," was nearing the Tyne at 5 o'clock in the morning she got into difficulties, sent up distress signals, turned turtle and disappeared. The signals were answered by another wood pulp boat, bound from Sweden, who bore down on the place where the "Hartense Lea" had been and rescued all but six of the crew and passengers. The loss of the ship and cargo—not to speak of the passengers and crew—is one that can ill be spared at present now that shipping is one of the greatest problems for pulp and paper men.

### Foreign Paper.

I always had a lurking feeling that there was a stock of foreign paper in hiding somewhere round the country; because I was positive all the foreign stocks—and the foreign agents who represented them, and who so suddenly disappeared from London when the war broke out—could not find their way into consuming channels at a moment's notice. This week I have seen a little pre-war paper and on making enquiries I elicited the information that the agent went away so quickly he could only ask for storage room for the paper. While on the question of foreign papers, Mr. H. W. T. Garnett of Wharfeside, Otley, contributes a letter to the "Yorkshire Post," stating that he has been informed that he could secure 2,000 tons of foreign paper, delivered immediately from stock, although the average price was slightly higher than the price for a similar paper in Otley. He adds: "The British papermaker has today to face the unrestricted competition of the whole world and the reason why he has not been able to maintain his output of paper is due to the fact that the shipping companies were something like two months behind hand with their deliveries of pulp due in May and June, and much papermaking machinery was standing in consequence. Then followed the coal strike and now the reduced hours of labor, further restricting the output of the mills, Yorkshire of course felt the effects of the coal strike, but on the question of the 2,000 tons of foreign paper one would like to know its real origin."

### Paper Market News.

There is a fair amount of business passing in the paper market and prices are firm. Kraft paper and newsprint are greatly in demand just at the moment in England and stocks of the latter are already being laid in to cover emergencies in the way of a railroad disturbance. Norwegians report that the demand for newsprint on their side of the water is brisk and they confirm my statement in a dispatch of two weeks ago that prices had been advanced 10 to 15 per cent. Even at this advance mills say they are producing at a loss. Newsprint in England today can be purchased at 3½d per lb. and Kraft at 5½ to 5½ a ton. Foreign Kraft is slightly dearer. Millboards are 35 5s to 39 per ton. The demand for photographic paper, all kinds, continues to be great. It is one of those branches of the paper trade that has had a remarkable revival.

News has reached London from Ireland to the effect that up to the present time no less than 20 daily and weekly newspapers have been suppressed and the ma-

chinery put out of action. The suppression still goes on owing to the political situation. Meantime the paper industry of that country is receiving a rude shock. If there are no customers for the Irish mills' output it stands to reason business cannot continue. A great majority of the Irish newspapers support their own paper mills in the country.

### The Pulp Situation.

The pulp market is firm and steady and supplies are arriving regularly. Sulphite is keenly sought this week and prices are inclined to be a shade dearer. Sulphite bleached is up to £36 10s a ton and news quality £24. Easy bleaching sulphite can be had at £37 a ton c.i.f., etc. Moist ground wood is unchanged and the demand is fair. Mill owners are inclined to be a little upset over the industrial disturbances. If the pulp is available they want it immediately in their mills to guard against transport eruptions. Others feel disposed to await developments. This state of expectancy and somewhat unsettlement retards business; because the pulp man cannot get on, as he would like, with his selling, while, on the other hand, the mill man is tapping the pulse of the trade unions to see if it would be wise to rush in a stock of pulp to cover eventualities, or adopt the policy of wait and see. He must also make provision for the winter.

### Canadian Pulps.

Stocks of Canadian pulps in this country have lately been increased by new shipments from the Dominion and customers can have spot delivery if they want it. Some good supplies are at the Thames, and Lancashire centres to be disposed of. These supplies show a healthy sign of expansion and they should meet any situation that may arise in the market.

### Notelets.

While working at the Wells Paper Mills, in Somerset, a lad named Geo. Weave, caught his arm in the machinery and had it completely severed.

John Dickinson & Co., Ltd., announce an interim dividend of 5 per cent on the ordinary shares payable Oct. 1st.

Edward Lloyd, Limited, have declared a dividend in respect of the half year ended June 30th last on the 5½ cumulative preference shares at the rate of 6s in the £1 payable Oct. 1st.

The first ship reaching England from Germany with a commercial cargo arrived this week. No paper or pulp were aboard—only clover seed.

Sweden is locking out all employees in the wood-working industry. For some time past labor troubles have been threatened.

Profiteering Tribunals were set up this week in London. If a man pays too much for pulp or too much for paper he can consult the Tribunal as to a refund.

### PRICE BROS. & CO. 102 YEARS OLD.

The first record of the firm of Price Brothers and Company occurs in the year 1817, although it is thought to have been in existence a few years earlier. William Price, the founder, came to this country on a mission for the British Government of that time to inquire into the value of the timber production for the purposes of the navy, the avenues from which that branch of the service had been securing its supplies for ship-building having been closed by the dissections then existing in Europe. Struck by the possibilities of the country, he remained and founded the firm.

Dirt and disorder indicates laziness and incompetence.

# Pulping Quality of American Woods

By Otto Kress, Sidney D. Wells, and Vance P. Edwards.  
Forest Products Laboratory, Madison, Wis.

(Continued from Last Issue.)

**LONGLEAF PINE**—*Pinus palustris*. Wt. 34 lb. Fiber 3.7 m.m.

*Range*—Coast region, from southern Virginia (Norfolk) to Florida (Tampa Bay and Cape Canaveral) to eastern Texas (Trinity River); northward in Alabama to the northeastern part of the State (Clay and Walker counties) and northwestern (border counties) Georgia.

*Common names*—Longleaved Pine (Va., N. C., S. C., Ga., Ala., Fla., Miss., La., Tex.); Southern Pine (N. C., Ala., Miss., La.); Yellow Pine (Del., N. C., S. C., Ala., Fla., La., Tex.); Turpentine Pine (N. C.); Rosemary Pine (N.C.) Brown Pine (Tenn.); Hard Pine (Ala., Miss., La.); Georgia Pine (*general*, Del.); Fat Pine (Southern States); Southern Yellow Pine (*general*); Southern Hard Pine (*general*); Southern Heart Pine (*general*); Southern Pitch Pine (*general*); Heart Pine (N. C. and South Atlantic region); Pitch Pine (Atlantic region); Longleaved Yellow Pine (Atlantic region); Longleaved Pitch Pine (Atlantic region); Longstraw Pine (Atlantic region); North Carolina Pitch Pine (Va., N. C.); Georgia Yellow Pine (Atlantic region); Georgia Heart Pine (*general*); Georgia Longleaved Pine (Atlantic region); Georgia Pitch Pine (Atlantic region); Florida Yellow Pine (Atlantic region) Florida Pine (Atlantic region); Florida Longleaved Pine (Atlantic region); Texas Yellow Pine (Atlantic region); Texas Longleaved Pine (Atlantic region).

## Sulphite Pulp

Yield 1,840 lb. (crude pulp). Cannot be bleached. Very poor color. In general, this wood cannot be considered satisfactory for sulphite pulp.

*Possible Uses*—Few.

## Sulphate Pulp

Yield 1,600 lb.

*Character*—Strong but coarse fiber.

*Possible Uses*—Similar to white spruce.

**NORWAY PINE**—*Pinus resinosa*. Wt. 27 lb. Fiber 3.7 m.m.

*Range*—From Newfoundland and along the northern shores of St. Lawrence Gulf to northern Ontario (north of Abitibi Lake) to southern Manitoba (near southern end of Lake Winnipeg); southward through the Northern States to Massachusetts (Middlesex County), Pennsylvania (Chester County), northeastern Ohio (north of Cleveland) central Michigan (Saginaw), northern Wisconsin (Oshkosh and Eau Claire), and northeastern Minnesota.

*Common Names*—Red Pine (Vt., N. H., N. Y., Wis., Minn., Ont.); Norway Pine (Me., N. H., Vt., Mass., N. Y., Wis., Mich., Ont.); Hard Pine (Wis.); Canadian Red Pine (Eng.)

## Sulphate Pulp

Yield 1,350 lb.

*Character and Possible Uses*—Similar to white spruce.

**PITCH PINE**—*Pinus rigida*. Wt. 29 lb. Fiber — —  
*Range*—From southern New Brunswick (St. Johns river) to eastern Ontario (north shore of Lake On-

tario and lower Ottawa River) and southward in the Atlantic region to southern Virginia (Norfolk) and along the mountains to northern Georgia (Atlanta); west to western New York (Ithaca), northeastern Pennsylvania, eastern Ohio (border counties south of Canton) and Kentucky, eastern Tennessee (to Cumberland Mountains).

*Common Names*—Pitch Pine (vt. N. H., Mass., R. I., Conn., N.Y., N.J., Pa., Del., W. Va., N.C., S.C.; Ga., Ohio, Ont., Md., Eng.); Longleaved Pine (Del.); Longschat Pine (Del.); Black Norway Pine (N. Y.); Hard Pine (Mass.); Yellow Pine (Pa.); Black Pine (N. C.); Rigid Pine (Eng. lit.); Sap Pine (lit.)

## Sulphate Pulp

Yield 1,430 lb.

*Character and Uses*—Similar to white spruce.

**SAND PINE**—*Pinus clausa*. Wt. 29 lb. Fiber — —  
*Range*—Coast of Alabama (Baldwin County) and western Florida (to Peace Creek); east coast of Florida from St. Augustine to Halifax River.

*Common Names*—Sand Pine (Fla., Ala.); Oldfield Pine (Fla.); Florida Spruce Pine (Ala.); Scrub Pine (Fla.); Spruce Pine (Fla.); Upland Spruce Pine (Fla.)

## Sulphite Pulp

Yield 1,300 lb. Difficult to bleach, and shivey.

Easily pulped—fair strength—good color.

*Character and Possible Uses*—As a substitute for white spruce.

## Sulphate Pulp

Yield 1,240 lbs.

*Character and Uses*—Similar to white spruce.

**SCRUB PINE**—*Pinus virginiana*. Wt. 26 lb. Fiber 2.8 m.m.

*Range*—From New York (Staten Island) to South Carolina (Aiken River) and northern Alabama (Winston, Cullman, and Dekalb counties); west into southern Indiana, to middle Tennessee (Putnam County).

*Common Names*—Jersey Pine (N. J., Va., Del., N. C., S. C.); Scrub Pine (R. I., N. Y., Pa., Del., N. C., S. C., Ohio); Short Shucks (Md., Va.); Shortshat Pine (Del.); Spruce Pine (N. J., N. C.); Shortleaved (N. C.); Cedar Pine (N. C.); River Pine (N. C.); Nigger Pine (Tenn.); New Jersey Pine (lit.)

## Sulphite Pulp

Yield 1,000 lb.

Difficult to bleach, easily pulped and good color.

*Possible Uses*—As a substitute for spruce.

## Sulphate Pulp

Yield 1,250 lb.

*Character*—Strong but coarse fiber

*Possible Uses*—Similar to white spruce.

**SUGAR PINE**—*Pinus lambertiana*. Wt. 23 lb. Fiber 4.1 m.m.

*Range*—Coast region from Oregon (head of McKinzie and Rogue rivers) to California (Sierra Nevada Mountains and coast ranges to Santa Lucia Mountains; San Bernardino and Cuyamaca mountains).

*Common Names*—Sugar Pine (Cal., Oreg.); Big Pine, Shade Pine (Cal.); Great Sugar Pine; Little

Sugar Pine, Gigantic Pine (Cal. lit.); Purple-colored Sugar Pine.

*Sulphite Pulp*

Yield 1,010 lb. A little difficult to bleach. Easily pulped. Poor strength fair color.

*Possible Uses*—Dark colored wrappings.

*Sulphate Pulp*

Yield 1,130 lb. Difficult to bleach, shivay.

*Character of Uses*—Similar to white spruce.

**WESTERN YELLOW PINE**—*Pinus ponderosa*. Wt. 24 lb. Fiber 3.6 m.m.

*Range*—From British Columbia (interior south of lat. 51°), and Dakota (Black Hills region), southward in the Pacific and Rocky Mountain region to western Texas and Mexico.

*Common Names*—Yellow Pine (Cal., Colo., Mont., Idaho, Utah, Wash., Oreg.); Bull Pine (Cal., Wash., Utah, Idaho, Oreg.); Big Pine (Mont.); Longleaved Pine (Utah, Nev.); Red Pine, Pitch Pine; Southern Yellow Pine; Heavy-wooded Pine (Eng.); Western Pitch Pine; Heavy Pine (Cal.); Foothills Yellow Pine; Sierra Brownbark Pine; Montana Black Pine (Cal. lit.); "Gambier Parry's Pine" (Eng. lit.)

*Sulphite Pulp*

Yield 1,130 lb. Difficult to bleach, shivey.

Not difficult to pulp. Very poor strength and color.

*Possible Uses*—Few.

*Sulphate Pulp*

Yield 1,100 lb.

Character—Fine, high grade, very strong, and tough fiber.

*Possible Uses*—Same as white spruce.

*Mechanical Pulp*

Yield 2,060 lb.

Character—Fibers are long, coarse and soft, creamy color and somewhat pitchy.

*Possible Uses*—Where a medium quality of groundwood will answer the purpose.

**WHITE PINE**—*Pinus strobus*. Wt. 22 lb. Fiber 3.8 m.m.

*Range*—From Newfoundland (White Bay region) and along the northern shores of St. Lawrence Gulf to northern Ontario (near Abitibi) and Nipigon lakes) southern Manitoba (near southern end of Lake Winnipeg); southward through northern and eastern Minnesota, northeastern (Mitchell county) and eastern border of Iowa (to Scott county), northern (counties) Illinois, southern shores of Lake Michigan, southern Michigan (north of Allegan, Eaton, and St. Clair counties), northeastern and eastern (border counties) Ohio, and along the Allegheny Mountains to northern Georgia (Tallulah Falls).

*Common Names*—White Pine (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Va., W. Va., N. C., Ga., Ind., Ill., Wis., Mich., Minn., Ohio, Ont., Nebr.); Weymouth Pine (Mass., S. C.); Soft Pine (Pa.); Northern Pine (S. C.); Spruce Pine (Tenn.).

*Sulphite Pulp*

Yield 1,210 lb. Difficult to bleach.

Difficult to pulp. Fair strength, but shivey and poor color.

*Possible Uses*—Few.

*Sulphate Pulp*

Yield 1,100 lb.

Character—Excellent strength and color.

*Possible Uses*—Similar to white spruce.

*Mechanical Pulp*

Yield 1,890 lb.

Character—Good strength and color, but pitchy.

*Possible Uses*—Similar to white spruce.

**INCENSE CEDAR**—*Libocedrus decurrens*. Wt. 23 lb. Fiber 2.0 m.m.

*Range*—From Oregon (North Fork of Santiam River and southward on the western slopes of the Cascade Mountains through California (Western slopes of Sierra Nevada Mountains and coast ranges from Southern border of Mendocino County to San Bernardino, San Jacinto, and Cuyamaca mountains); Western Nevada; Lower California (Mount San Pedro Marip).

*Common Names*—White Cedar (Cal., Oreg.); Cedar (Cal., Oreg.); Incense Cedar (Cal., Oreg.); Post Cedar (Cal., Nev.); Juniper (Nev.); Bartard Cedar (Cal., Wash.); Red Cedar; California Post Cedar (Cal. lit.)

*Sulphite Pulp*

Yield 830 lb. Difficult to bleach.

Good strength—poor color.

*Possible Uses*—Few.

*Sulphate Pulp*

Yield 950 lb.

Character—Dark colored, strong and hard fiber.

*Possible Uses*—As a substitute for white spruce.

**BALD CYPRESS**—*Taxodium distichum*. Wt. 27 lb. Fiber 3.3 m.m.

*Range*—From southern Delaware (Sussex County and southward in the coast region) to Florida Mosquito Inlet and Cape Romano; westward in the Gulf coast region to Texas (Devils del' River); and northward through Louisiana, Arkansas, and eastern Mississippi and Tennessee, southeastern Missouri, western and northwestern Kentucky, southern Illinois, and southwestern Indiana (Knox county).

*Common Names*—Bald Cypress (Del., N. C., S. C., Ala., La., Fla., Tex., Ark., Mo., Ill., Ind.); White Cypress (N. C., S. C., Fla., Miss.); Black Cypress (N. C., S. C., Ala., Tex.); Red Cypress (Ga., Miss., La., Tex.); Swamp Cypress (La.); Cypress (Del., N. C., S. C., Fla., Miss., Ky., Mo., Ill.); Deciduous Cypress (Del.) Ill., Tex.); Southern Cypress (Ala.).

*Sulphite Pulp*

Yield 1,160 lb. Very difficult to bleach.

Difficult to cook—poor strength and color.

*Possible Uses*—Few.

*Sulphate Pulp*

Yield 1,350 lb.

Character—Fiber long but tender.

*Possible Uses*—As a substitute for white spruce.

(To be continued next week.)

The Martin Sales Agency, 32 Front St., West, Toronto, have been appointed exclusive Canadian agents for the National Binding Machine Company of New York, manufacturers of National Package Sealers and National Gum Paper Tape. The use of gummed paper instead of cord or twine is said to lower the cost as well as the time in doing up packages.

Following agricultural products in value of export, the products of the Canadian forest come second. This classification includes pulp, paper, pulpwood, and lumber.

### SENATORS SEE PULP AND PAPER MILLS.

For the purpose of seeing two of the greatest centres of water power and pulp and paper manufacturing on the continent, namely, Shawinigan Falls and Grand Mere, a party of Senators representing all the provinces of the Dominion visited these two places last week.

The visit was arranged by Senator Smeaton White, of Montreal, whose guests the Senatorial party were during the two days. The Senators who composed the party were: Hon. Hewitt Bostock, British Columbia, leader of the Opposition in the Senate; Hon. Henry Thorne and Hon. George Fowler, New Brunswick; Hon. H. D. Laird and Hon. W. B. Willoughby, Saskatchewan; Hon. L. McMeans, Hon. Dr. Schaffner and Hon. Robert Watson, Manitoba; Hon. L. G. De Veber, Alberta; Hon. John Fisher, Hon. W. H. Bennett and Hon. Richard Blain, Ontario; Hon. Dr. P. C. Murphy, Prince Edward Island, and Hon. Smeaton White, Quebec.

After an interesting tour of inspection of the paper mill and aluminium works, the party were the guests of Mr. Biermans at the Cascade Inn. Several Senators spoke of their pleasure and surprise in the developments they saw at Shawinigan Falls.

Mr. H. Biermans, general manager of the Belgo-Canadian Pulp Company and president of the Canadian Export Paper Company, Shawinigan Falls, spoke of the pleasure it gave him to entertain the law-makers of the Dominion. Referring to the paper industry, and to his own mill in particular, financed entirely by Belgian capital, he pointed out that until one year before the war, his mill had never earned enough money to pay a dividend.

In reply to a query, Mr. Biermans stated that Canada only consumed ten per cent of the entire paper of the eastern mills. The action of the Canadian Government in fixing a maximum price at which paper could be sold to the Canadian publishers had been largely responsible for publishers of the United States getting Canadian paper at a low price. The Canadian paper manufacturers considered the action of the Government unfair in so regulating their business to their detriment.

From Shawinigan Falls the Senators went to Grand Mere, where they were taken over every part of the power house and the pulp and paper mill and shown the beauties and comforts of the town. A visit to the nurseries of the company under Mr. Elwood Wilson, chief forester, was probably the most outstanding feature of the whole trip. The trees in the nurseries are for the purpose of reforesting the company's lands.

Dinner at the Laurentide Inn, Grand Mere, with Mr. George Chahoon, Jr., president of the Laurentide Company, presiding, provided an opportunity for many of the Senators in short speeches to express to him their appreciation of the national work he and his company were performing in welding into one harmonious whole a community of working people free from labor troubles. In this fact alone it provided an object lesson for the rest of the Dominion. The company's policy of re-forestation was also highly commended, and the support of the visiting Senators pledged to such a work.

Mr. Chahoon dwelt at considerable length upon the necessity of a re-forestation policy for the whole Dominion, pointing out the grave position that the United States now finds itself in, owing to the depletion of its forests. His own company had entered into an extensive scheme of re-forestation, and would plant 2,000,000 trees next year, but he felt that the Govern-

ment should compel timber operators to plant one tree for every one cut down, and the Provincial Government should at the same time co-operate in the way of exemption of taxation for such lands as were being replanted.

### SUMMARY OF NATIONAL SAFETY COUNCIL CONGRESS.

The attendance at the National Safety Council Congress, which took place at Cleveland, Ohio, October 1st to 4th, was on a grander scale than ever before, and the spirit shown at all the sessions denoted great keenness on the part of all the delegates. The principal speakers were of the first rank and treated their subjects in masterly fashion, so much so in fact that the audiences were seldom disturbed by the inconsiderate moving in and out of delegates during the sessions, so much in evidence at most conventions.

The sessions of the Paper and Pulp Section were particularly well attended, and the interest was sustained up to the end of the last session.

Friday's session found the accommodation provided by the officials much too small and an overflow audience had to be content with chairs in the passage outside the meeting room.

Papers were contributed by Messrs.: G. W. Dickson, Riordon Pulp & Paper Co., Ltd., Hawkesbury, Erling Riis, Wausan Sulphate Fibre Co., Mosinee, Wis.; Robert Altman, Marathon Paper Mills Co., Rothschild, Wis.; H. H. Matthieson, Crown Willamette Paper Co., Portland, Oregon; S. F. Shattuck, Kimberley-Clark Company, Neenah, Wis.; Al Kroes, Employers and Mutual Liability Insurance Co., Wausan, Wis.

These gentlemen were by the excellence of their papers instrumental in creating the enthusiasm that marked the sessions from beginning to end.

Mr. Al Kroes was particularly successful in his poster talk and presented to the meeting his methods of getting close to employees in a humorous, vigorous, effective way. The meeting was sorry indeed when the discussion of this paper came to a close, and showed its feeling in a practical way by unanimously passing a standing vote of thanks and appreciation to Mr. Al Kroes for his address.

Before adjournment Mr. Robert Altman, Marathon Paper Mills Co., Rothschild, was elected Chairman of the Paper and Pulp Section in succession to Mr. A. P. Costigane who was anxious to be relieved of the duties.

Mr. G. W. Dickson, Riordon Pulp & Paper Co., Ltd., Hawkesbury, was elected Vice-Chairman.

Editor's Note: Canadian mills, especially in Ontario, will regret that Mr. Costigane has felt obliged to retire as Chairman. There is much consolation, however, in having the Canadian branch of the industry represented by so good a man as Mr. Dickson. Give him co-operation and support in his important duties.

The next issue of the Pulp and Paper Magazine will be a special Safety number, containing as many as possible of the addresses read at this congress.

The Bathurst Lumber Company has just installed a Sturtevant ventilating system in their beater room and a vapor absorbing equipment is being installed in the Fraser Company's sulphite mill at Edmondston. This is to be finished by Dec. 1st, and will add greatly to the output of their pulp drying machines. Warm air is to be blown in under the dryers so as to carry off the extra moisture from the thicker sheet of pulp that is to be run over the machine.

### PULP AND PAPER ASSOCIATION TO MOVE.

The Canadian Pulp and Paper Association is suffering from growing pains again. About two and a half years ago, when Mr. Dawe was appointed Secretary of the Canadian Pulp and Paper Association, the work was carried on at a desk in the offices of the Canadian Manufacturers Association and was at that time transferred to rooms in the Shanghnessy Building. In a few months even these new quarters proved inadequate and new offices in that building which were considerably larger and more convenient were taken up. New developments in the activities of the Association and the scope of its work has now made even these quarters cramped and the Association will move very soon to larger quarters in the Drummond Building, 511 St. Catherine St. W. Mr. Dawe anticipates that this location will be much more convenient to members of the Association and as he expressed it, "the Association will be getting out of the slums."

### COMING EXPANSIONS IN NEWSPRINT MILLS.

Canadian newsprint mills are not content to stand still with their present achievement of an output of over 700,000 tons a year. An estimate made for The Financial Post indicates an increased production within the next year of 500 tons daily, or 150,000 tons a year, which would bring the total production in Canada to 850,000 tons a year. At the present fixed price of \$66 a ton, the value of the newsprint alone would be \$56,100,000 a year.

The present and prospective plans of the Canadian mills are as follows:

Brompton Pulp and Paper Co., East Angus, Que., one new 50-ton machine, installed this year and now operating.

Spanish River Pulp and Paper Mills, two 50-ton machines at Sault Ste. Marie, which will be in operation this fall.

Price Bros. & Co., one 50-ton machine at Kenogami mill, ready by Dec. 1.

The Laurentide Company, Grand Mere, Que., two 30-ton machines, in operation on July 1, 1920.

International Paper Company's new mill at Three River, Que., with capacity of 200 tons daily.

A total of 500 tons daily.

Note: Our contemporary has apparently overlooked the two big machines for the Abitibi Power and Paper Co., which should add at least another 150 tons daily.

### HON. MR. ALLARD'S RETIREMENT.

We fully agree with our friends in Grand Mere in the following expression of appreciation of the good work done for forestry in Quebec and Canada by Hon. Jules Allard during the ten years of his service.

The retirement of Hon. Jules Allard from the post of Minister of Lands and Forests for the Province of Quebec will be generally regretted by all who are connected with the lumber and pulp and paper industries. During the ten years that Mr. Allard was in charge of the administration of Quebec's forest domain, much progress has been made and under his clear-sighted and wise direction the woodland industries have been assured of a square deal, have been allowed scope for development and extension, and thereby the public wealth has been increased by millions of dollars annually. Without a doubt Quebec now has the most advanced and enlightened policy of any of the provinces so far as the preservation of the forest wealth is concerned, and to Mr. Allard the credit is due for

the achievement of this position of superiority. His successor in office, Hon. Honore Mercier is a man of broad views and progressive policy, and it may be expected that under his direction the Department of Forests will continue to achieve the noteworthy results that have marked the years of Mr. Allard's administration.

### NEWSPAPERS USING MORE PAPER THAN EVER.

A study of the newsprint situation as to the amount of paper being used by the big dailies as compared with that in recent months shows, among other interesting facts, that no effort is being made to conserve, rather the reverse.

There is no doubt that the publishers believe sincerely in conservation, for the other fellow, but each one seems to feel, to judge from the cold figures at least, that he, with the advertisers crowding his columns and crying for more space, should be permitted to go ahead and use all the paper he wants.

Figures compiled by the News Print Service Bureau, giving the number of pages in each issue of each daily in New York, Chicago and Washington, fairly representative cities from which the country, as a whole, may fairly be judged, show that June was the high month for the past six months.

While no figures are available previous to those for April, it may be accepted as a fact that June of 1919 was the high month in newspaper history for consumption of paper.

During 1918 war restrictions were in force, but in January of this year business became more lively, ushering in the beginning of the biggest era of newspaper advertising this country has ever known.

Daily newspaper publishers met this demand by increasing the number of pages in each issue, adding tremendously, in the aggregate, to the amount of paper used, notwithstanding the higher price of news print.

Roughly speaking, all the New York dailies together, for instance, (not including Sundays) averaged 21 pages a day in April, 22 in May, 23 in June, 24 in July, 20 in August and 22 in September, with a steady upward tendency during September.

Publishers wanting extra tonnage just now are scouring this country and Canada for odd lots that can be picked up and are paying from 5¼ to 5½ cents a pound, as against their contract price of around 3¾ cents for the year.—The Fourth Estate.

### ARTIFICIAL COAL FROM SULPHITE-LYE.

At the Greaker cellulose mill, near Fredriksstad, Norway, a new method for producing fuel from sulphite-lye has recently been tried, and the result is exceedingly satisfactory. It will in this way be possible to extract surprisingly large quantities of fuel from this lye, which before was thrown into the sea. The mill will in this way obtain much more fuel than it needs for its own wants. For Norway, Sweden and Finland the new invention will be of considerable importance, as in this way a large part of the coal fuel which otherwise has to be imported, may be replaced with this artificial fuel. The factory is so far only built up to one-half of its intended size, but will soon be extended. The fuel is produced as a brownish powder, which is burnt in a special kind of oven. The factory and its new method have been the subject of much attention among specialists, and there is an influx of foreign engineers to look at it. The mill mentioned above will, besides fuel for its own use, have considerable quantities for sale.—The Paper Maker.



## Taking Action on Forestry Problems

The Pulp and Paper Magazine is very much pleased with this "anonymous" contribution, especially as we know who sent it.—Ed.

Propaganda for the better treatment of our woodlands has always carried a prominent and noteworthy characteristic in the sympathy and co-operation of the lumbermen. The meeting of foresters and lumbermen in frank open discussion of their problems invariably incites comment of admiration and envy from the visiting foresters from other countries. A striking characteristic has been friendly co-operation—in discussion. Foresters and lumbermen have met and talked and made resolutions on the advisability of doing certain things for the benefit of the forest. They have separated to meet again next year to talk and make more resolutions. They have been doing this for thirty years and they have accomplished much in an educational way. But in reality the forests can be improved only by action in the forest, not in the office chair, not in the hotel corridor, not even at the banquet table. However, the more progressive foresters and lumbermen have realized this and so it has come to pass that theories are to be put into practice. Indeed, the only way to determine whether or not a theory will work is to try it—a self-evident fact lost sight of by other men than those interested in the welfare of the forests.

The Bathurst Lumber Company in co-operation with the New Brunswick Forest Service is carrying on experimental cuttings on 500 acres of undersized spruce on the Nipisquit River. A portion of the area is being cut under the strip system. Strips from one chain wide to three chains wide are cut clean, with strips two chains wide between each uncut or lightly culled. A portion is being cut clean in more or less circular patches of various sizes, comprising one-quarter acre to two acres in extent. Other positions are being thinned by cutting to 10, 8 and 6 inch diameter limits respectively. The slash on one-half the area of each cutting system is to be burned and on the other half unburned. The Provincial Forest Service furnishes a forest engineer who, in co-operation with Mr. Lordon, of the Bathurst Lumber Company, will carry out the plans of the cutting.

The Laurentide Company in co-operation with the Quebec Forest Service will undertake similar experimental cutting in a stand of 300 acres mostly culled only for pine on Cache Lake, whose waters reach the St. Maurice River at Rapid Blanc. The area contains a peat bog, a merchantable black spruce swamp, balsam and spruce ridges, a merchantable stand arising from an old burn, and mature spruce and balsam in various degrees of mixture with hardwoods, so that most of the types in which logging operations are being conducted in Quebec are represented on this comparatively small area. The Logging Department and the Forestry Division of the Laurentide Company and the Provincial Forest Service will co-operate in carrying out details of the cutting.

On both areas a careful record will be made of the cost of slash burning.

The Commission of Conservation at Ottawa has the task of measuring and recording the results on each experimental area. Sample acres will be laid off and the volume of wood fiber and rate of growth under the present and past conditions will be ascertained and will be used as the standard to measure the results of the various methods of cutting in terms of future

growth. The investigations will include the effect of cutting to various diameter limits upon windfall, upon diameter increment, volume accretion, upon the growth of the young trees already established in the stands, and the reproduction of the commercial species after the cutting. The areas upon which the slash is burned and those upon which it is unburned will be used for a comparative study of the effects of these two conditions upon reproduction and, in co-operation with the Dominion Entomological Branch, upon prevalence of insect diseases. These areas (burned and unburned) will also be studied in a comparative way by an expert from the standpoint of breeding ground for the various heart rot diseases of spruce and balsam.

This work will be carried on during the logging operations and will doubtless occupy a small investigation party during the coming summer. After that it is planned to visit the areas periodically for a number of years to measure and record results. In this way only can accurate and useable data be obtained from the experimental cuttings.

Negotiations are on the way between the Fisheries Branch at Ottawa, the Provincial Forest Service of New Brunswick and the Commission of Conservation to establish an experiment station on 240 acres belonging to the Miramichi Fish Hatchery of South Esk, New Brunswick. The area is badly infested by spruce budworm, and a special study will be made of this disease on the area by the Dominion Entomological Branch. The area is being cruised and plans drawn up for regulated cutting.

In this connection it might be mentioned that the Commission of Conservation and the Entomological Branch in co-operation with the respective companies have already established some 25 acres of permanent sample plots on the Laurentide Company limits at Lake Edward and on the Riordon Pulp and Paper Company limits on Lac Tremblant, where a detailed study is being made of forest insect and fungous diseases; of the effects of the various degrees of cutting on the regeneration and growth of spruce and balsam; and particularly experiments are being inaugurated to determine the conditions for a more abundant natural reproduction of spruce after logging.

It is reported that the Riordon Pulp and Paper Company has under way plans for the establishment of an extensive experimental area, some 5,000 acres it is said, where not only different cutting methods will be tried but also experiments in broadcast seeding and in underplanting in the various conditions usually presented by logged-over and burned-over lands. Detailed and expert studies like those outlined above for the other cutting areas will be encouraged and facilities supplied for them. In fact, the plan is apparently to develop a forest experiment station where any investigator or investigative body of proved achievement may attempt to solve forest problems of economic bearing.

While the rate of exchange is still adverse to British remittances of capital to Canada, it is markedly less so than in the case of remittances to the United States—in the precise ratio of the respective exchange values of the Canadian and American dollar. The premium on New York Funds in Montreal is therefore a material advantage to Canada in competing with the United States for British capital, and acts as a sort of Imperial preference for keeping British capital within the Empire.—Investment Items.

### NEW MACHINES FOR LAURENTIDE.

Following the Laurentide policy of keeping pace with the latest and best in the paper-making industry, the management of the company have decided upon extensive additions to the equipment of the plant which will keep the Laurentide organization in place among the leading plants of this continent in the matter of equipment and efficiency.

A contract is now in process of negotiation for two 166-inch newsprint machines, to be known as Number 8 and Number 9 machines. The small machine which has been known as number eight in the past will in future be known as the wrapper machine, for it will be used for the manufacture of wrapper almost exclusively.

The new machines are to be placed in a new building to the west of the present Number 3 machine room. This building will be 320 feet long by 90 wide and two stories in height. It will be of non-combustible construction throughout and its architectural design will be similar to the present machine rooms, except that it will have a flat concrete roof on steel trusses. The interior of this new machine room will be one of the "show" places of the plant. The walls will have enamelled tile wainscoting and the floors are to be of special composition similar to those in the power house.

Both of the new machines are to be designed to run up to one thousand feet of paper per minute. They will not start off at this pace when they are first run, however. They will be started at about 650 feet per minute and as they become "tuned up" their speed will be increased until they reach the maximum of one thousand feet every minute that they run. The length of the wire will be about 112 feet, and it will be pitched about four feet. There will be four presses and forty dryers, each six feet in diameter. The details of the driving arrangement have not yet been fully worked out, but it is expected that a very great improvement will be made over anything that has been installed up to date. The machines will also have a number of new features, details of which are not yet available.

Over each of the machines will be an electric travelling crane of about twenty-five tons capacity.

The new machines will bring the total production of the Laurentide plant up to 360 tons of newsprint per day.

In addition to the extension to the paper mill, other new equipment is to go into the Laurentide plant in the near future. Three new grinder units are to be placed in an extension to the present grinder-room. Outside of these, the new machines will require additional machinery in the groundwood screen room, and new equipment in the boiler-house, where an additional battery of boilers will be installed. No changes will be necessary in the sulphite mill as it already has much more than sufficient capacity to supply the additional requirements of sulphite pulp. The present sulphite slush system will be extended to take care of the new machines.

Since reading this interesting information in *The Digester* the Pulp and Paper Magazine has been informed that the contract has been placed with the Dominion Bridge Company, Montreal. The machines will be built at Lachine, where every facility in the way of floor space, machine tools and expert engineers and designers can be found. It is very gratifying to note the success attendant upon the effort being made to do things of this kind in Canada.

### WHY IS A BEATER?

Dear Mr. Editor:

Being young and a stranger to the history of the paper industry I am frequently puzzled to account for some of the practices of the mills, and I would consider it a favor if you or some of your correspondents could set me right in a few things.

Take the beater, for instance. Several men who should know tell me that speed of circulation is to be desired because then more of the stock passes under the roll per minute. But I notice that the channels in the beater tub are of rectangular section and that the pulp is expected to do a very sudden "about face" at each end. Now when a civil engineer wants to move water with the least waste of power he uses a channel with a curved bottom and carefully lays out the curve according to the approved principles of hydraulics. Even the humble sewer pipe in the street is made egg shaped so as to provide sections which will offer least resistance to flow when different amounts of water are passing. And when the direction of flow is to be changed the engineer sees to it that the change is not made too abruptly by curving his pipes at gentle angles as in the tailrace from a turbine. Now I would like to know why these things are not considered in making a beater. Is it that there is some virtue not apparent to me, in making the stuff fight its passage at each end of the beater and linger in the sharp corners at the bottom of the tub? Or have paper mill engineers forgotten about the principles of hydraulics? Or do they consider the problem beneath their notice and regard the flow of pulp as less important and interesting than the flow of sewage?

And then there's the beater roll. They tell me its bars are to rub or cut the stock according to the will of the beater man and that spaces between the bars are left to carry the stock through. But what good is served by carrying the stock past the bedplate in such a space? It seems to me something like carrying the chicken through the kitchen to flavor the soup. I should think that if the fibres were to be cut or rubbed between the roll and the bedplate, it would be the part of wisdom to see that as few of them as possible got through without being rubbed or cut. Of course, if there were some big lump—frozen pulp, for instance—it might be necessary to neglect the finer stuff until the big pieces were broken down. But there is probably some important reason for things as they are, only I don't know it.

Now, Mr. Editor, I don't want to bother you too much all at once so I won't ask any more questions though there are many I would like to ask. I will be very grateful to you if you can explain away my difficulties, or if you can, by publishing this letter, induce someone else to clear them up.

### QUESTIONER.

Editors Note: Our young friend apologizes for asking "fool questions." No apology is needed. Doubtless many others have had similar thoughts. Our readers are invited to help them out.

At the Kipawa Fibre Company's plant at Temiskaming, Ont., the heating and ventilating equipment will include a novel feature in the exhaust for the machine room. This will include copper fans of the turbo-vane type that are being built especially for this work by the B. F. Sturtevant Co.

Safety cuts out worry.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-14. Qualitative determination of the loading of paper.** (Détermination qualitative de la charge d'un papier.) Laboratoire de l'Union Française de Papeterie. *La Papeterie*, 41, 266-72 (Aug. 25, 1919). A description of the properties of the various materials used for loading, gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ), heavy spar ( $\text{BaSO}_4$ ), talc, kaolin, asbestos, colored earths, and of the materials used for both loading and sizing silicic acid, calcium silicate, starch; together with excellent plates showing their appearance under the microscope.—A.P.-C.

**A-14. Composition of pulps.** (Composition des pates.) Marius Peyret. *La Papeterie*, 41, 279-83 (Aug. 25, 1919). The cost of production of a paper depends on its ingredients and on the method of working them up. A manufacturer or superintendent wishing to duplicate a given sample must first analyse it to find the amount and nature of the loading, the proportions of the various kinds of pulp, and the strength. It is easy to determine if a paper is sized and experience readily allows of an estimate of the amount of size required to obtain given results. The cost of production depends also on the equipment of the mill and the power available.—A.P.-C.

**B-2. Tree planting work in Quebec.** *Can. For. J.*, July, 1919, p. 309. Provincial forest nursery at Berthierville, Que., and plantations of the Laurentide Company at Grand Mere. The necessity for planting emphasized by the fact that companies can not afford, after 50 years from cutting, to establish camps to cut only 2½ cords per acre. Over great areas of cut-over lands the growth of pulp wood species will apparently be no more than this.—C.L.

**B-2. Planting suitable shade trees.** F. E. Buck. *Can. For. J.*, July, 1919, p. 291. See also pp. 294, 295 and 297-299 of same issue.—C.L.

**B-2. To change Quebec's cutting regulations.** Resolutions passed by Woodlands Section of Canadian Pulp and Paper Association, June 25, 1919. *Can. For. J.*, July, 1919, p. 296. Executive Committee of the Association to appoint a committee to co-operate with the Quebec Limit Holders' Association, in waiting upon the Quebec Government with a view to urging revisions of cutting regulations to correspond with present day conditions.—C.L.

**B-2. Blocking sand dunes with trees.** G. C. Piche. *Can. For. J.*, June, 1919, p. 253. The planting work of the Quebec Forest Service.—C.L.

**B-2. Planning a prairie tree plantation.** Dominion Forestry Branch. *Canadian Forestry J.*, June, 1919, p. 255. The establishment of forest plantations in the prairie provinces.—C.L.

**B-2. Our water powers and reforestation.** *Can. For. J.*, June, 1919, p. 263. The New York State College of Forestry advocates an extensive planting program in that state, on the watersheds of streams used for power.—C.L.

**B-3. The forests losing fight in Arctic Canada.** Frits Johansen. *Can. For. J.*, July, 1919, p. 303. The intense cold of changing climate has killed young trees—remainder an easy prey to insects.—C.L.

**B-3. Forest fires in Ontario, New Brunswick and**

**Nova Scotia.** *Can. For. J.*, July, 1919, pp. 320-321.—C.L.

**B-3. Making slash burning a safe job.** Hy. Sorgius. *Can. For. J.*, July, 1919, p. 321. Discusses this important problem, and gives rules for safe burning.—C.L.

**B-3. Clearing the forest of debris.** Ellwood Wilson. *Can. For. J.*, July, 1919, p. 327. Advocates the use of fire rangers in the winter to follow crews and dispose of slash by burning at a safe time.—C.L.

**B-3. Canada starts aerial forest patrol.** *Can. For. J.*, May, 1919, p. 220. Experiment by the St. Maurice Forest Protective Association in co-operation with the Quebec and Dominion Governments. See also page 223 of same issue.—C.L.

**B-3. Passing of balsam budworm in New Brunswick.** John D. Tothill, Dominion Entomological Branch. *Can. For. J.*, July, 1919, p. 306. The depredations of the balsam budworm (also called the spruce budworm), in New Brunswick have been going on for the past five years, and great damage has been done the balsam, the damage to spruce being very considerably less. Later investigations have shown that the damage to spruce is also very serious. The loss as to both spruce and balsam in Quebec and New Brunswick will undoubtedly run into many millions of dollars. This outbreak has now passed its crest, and it may be expected that the amount of damage will decrease from year to year. Another outbreak may, however, be expected within 20 or 30 years, and may be much more serious than previous outbreaks due to the greater preponderance of balsam, in the reproduction which follows on cut-over lands. Tothill suggests attempting to prevent the formation of solid stands of balsam fir in order to minimize future damage.—C.L.

**B-3. Aerial patrol does good work.** *Can. For. J.*, July, 1919, 307. A description of work in airplane patrol in California and other western states. The results secured have been decidedly promising, and an extension of the work is anticipated in co-operation with Federal agencies.—C.L.

**B-3. The first flying patrol of forests.** Stuart Graham, R.A.F. *Can. For. J.*, June, 1919, p. 243. Mr. Graham brought two hydroplanes, loaned by the Dominion Government, from Halifax to Three Rivers for forest patrol purposes in the St. Maurice Valley under the auspices of the St. Maurice Forest Protective Association, and with the co-operation of the Provincial Government.—C.L.

**B-6. \$14,000,000 for forest roads.** *Can. For. J.*, July, 1919, p. 317. Discusses Federal appropriation in the United States for road construction in the National forests.—C.L.

### THE NEW EDITION OF THE PAPER MILL CHEMIST.

The Pulp and Paper Magazine has recently received a number of requests to supply copies of the Paper Mill Chemist by Dr. H. P. Stevens. The revised edition has just been issued and as our order has been on their files for some time it is expected that the books will shortly be at hand. A more extensive review will be published as soon as the books arrive.



# UNITED STATES NOTES

Mr. R. E. Horton of Albany, N.Y., one of the best known hydraulic engineers in the country, representing the St. Regis Paper Company, and James P. Brownell, of Carthage, acting for the Northern New York Utilities, Inc., have been making a careful survey to determine the rights of each of the two corporations on the question of height as it applies to the new dam which the Utilities Company is erecting in connection with its power re-development at the village of Black River. As Messrs. Brownell and Horton have been empowered to act as arbitrators in the matter, it is expected that a settlement will be effected very shortly and that the Utilities Corporation will resume construction work on the dam. The controversy came about when the St. Regis Paper Company objected to the projected improvement because of a desire to protect its own water power from depreciation. The Utilities Company, on the other hand, is anxious to bring its dam up to a point which will admit of sufficient head to allow 9,000 horsepower development.

Publication of most of the periodicals in the paper trade and allied fields printed in New York City has been seriously hampered as a result of the general cessation of work in the press rooms of the city last Wednesday. The situation arises from the effort of the publishers and employing printers to restrict their shops to union employees recognized by the International Union, resulting in the locking out of about 10,000 pressmen and other press-room workers. About 400 compositors, members of Typographical Union No. 6, have also walked out of a number of shops in which negotiations are still pending over their demands for a 44-hour week and an increase of \$14 a week in wages.

At a meeting of the Connecticut Valley local division of the Cost Association of the Paper Industry held September 22 at Holyoke, Mass., which was presided over by Mr. S. L. Bush of the Chemical Paper Manufacturing Company, representatives of all paper and pulp mills, as well as converters of paper in the Connecticut Valley, were declared eligible for admission to the association. Among the subjects discussed was the matter of proper handling of administration expense in cost. The meeting was attended by representatives of the following industrial concerns: the New York-New England Company, the Parsons Paper Company, the Valley Paper Company, the American Writing Paper Company, the Chemical Paper Manufacturing Company, and the Crocker-McElwain Company, all of Holyoke, the Esleek Manufacturing Company of Turner's Falls, Mass., and numerous other New England corporations.

The New York College of Forestry at Syracuse, N.Y., has just been presented with a collection of Oriental woods, comprising 300 authentic samples of Philippine trees, and representing 150 species. This is believed to be the most complete collection of the kind in the country. It was brought to Syracuse by Louis J. Reyes, of Manila, a Filipino forester, who has been sent to the New York State College of Forestry by the Philippine Forest Service to obtain a technical education as a special student in wood technology. Reyes is a graduate of the Forest School of the University of the Philippines and for six years has been a member of the Forestry Bureau of the Philippines.

He is probably the best informed man in the Philippines on the microscopic study of Oriental woods and is the first Filipino to be sent to America for forestry education.

The tremendous boost given to Maine timber land values by the wood pulp industry's operations in that State is shown by a comparison of to-day's prices with those realized at an auction sale held in Bangor City Hall in September, 1878, a time when the industry was still in its infancy. On that occasion about 350,000 acres of timber lands in the Counties of Aroostook, Penobscot, Somerset and Piscataquis sold at prices ranging from 25 cents to \$1.02 an acre. In the period between 1875 and 1890 spruce stumpage in Maine sold at \$1.25 to \$2 per thousand feet. When the pulp industry began to develop, the big concerns began to buy lands at wholesale, and at first were able to get what they wanted at a moderate advance over the old prices, but very soon prices went up by jumps to \$2, \$3, \$4 and \$5 an acre, then to an average of about \$7 for well wooded tracts on good driving waters. The later price held until the war came on. To-day the choicest of Maine spruce lands are worth not less than \$10 an acre, while many holdings are quoted at a dollar or two more, with no one anxious to sell. Even with spruce lumber selling at \$60 per thousand feet there is little disposition to turn logs to the sawmills in preference to the digesters.

The United States Forestry Service was urged last week by Congressman Randall, of California, to start a re-forestation program for the fire-denuded areas of the Sierra Madre range by using airplanes to scatter millions of tree seeds over these mountains as soon as the rainy season begins. After his conference with service officials, Mr. Randall wired civic organizations in Pacific coast cities to organize forestry associations to press action by the Government.

Wilfred A. Wilde, a chemist with the Eastern Manufacturing Co. is giving the courses in pulp and paper technology at the University of Maine this year. This company has always been very generous in encouraging educational work and has rendered valuable assistance ever since these courses were started at Orono.

Mr. J. D. Jensen has gone to Europe in connection with a new sulphite pulp mill to be erected in Newfoundland. Construction work on this will start early next spring.

## SOUTH AMERICANS VISIT PAPER MILLS.

A party of officials of the National Paper and Type Company accompanied by a number of the company's agents from South America recently visited Grand Mere and Shawinigan Falls and inspected the Laurentide plant and the Belgo Canadian mill.

The National Paper and Type Company handles the South American business of a large number of Canadian and American mills, the Canadian business being conducted through the Canadian Export Company, which looks after the Laurentide export business. The company recently held a convention in New York at which a number of its South American representatives were present, and the New York officials, accompanied by the South American agents are now making a trip to their mill connections, inspecting the various plants.

# PULP AND PAPER NEWS



The ratepayers of Peterborough, Ont., will vote on a bylaw on October 24 for the purpose of granting a bonus to the Nashua Gunned and Coated Paper Co. The council proposes purchasing a site along the Grand Trunk railway in the south end of the city with the buildings thereon for \$50,000 and spending \$7,000 in putting the structures in good repair. The land and premises will then be leased to the Nashua Co. for a period of five years at an annual rental of seven per cent per annum on the cost of the site and the repairs, with the option of the company to renew the lease for a further period of five years and also with a further option of purchasing the property at any time during the tenancy of the company. The by-law also fixes the assessment of the company at \$10,000 for ten years exclusive of total improvement taxes and school rates.

A. Clark Hunt, sec-treas. of the John Martin Paper Co., Winnipeg, spent a few days in Toronto last week on his way West after being in the East for a considerable time.

At the annual meeting of the stockholders of the Lake Superior Corporation, which was held recently in Camden, N. J., among the directors elected was Col. Thomas Gibson, D. S. O., C. M. G. of Toronto, who is one of the vice presidents of the Spanish River Pulp and Paper Mills and returned recently from a long service overseas.

John B. Berhalter of the selling staff of the Inter-lake Tissue Mills, has returned from a successful duck shooting and fishing expedition to Lake Seugog.

T. J. Allan, Vice President of Paper Sales, Limited, Toronto, has returned from spending his holidays in Boston and other eastern points.

C. J. Kay of the Columbia Paper Co., Vancouver, was in Toronto for several days during the past week on his return home from an extended business trip to the East.

Among those who attended the National Safety Council convention in Cleveland during the past week were A. P. Costigane, Secretary and Engineer of the Ontario Pulp and Paper Makers Safety Association, Toronto, C. Nelson Gain and H. St. J. Jarvis of the Don Valley Paper Co. and R. B. Morley, general manager of the Ontario Safety League, Toronto. Others present were G. W. Dickson of the Rirdon Pulp and Paper Co., Hawkesbury, and Mr. Richardson of the Laurentide Co., Grand Mere, Que. Mr. Costigane, who was the Chairman of the Pulp and Paper Division of the N. S. C. during the past year, has retired from that office after a period of faithful and earnest service.

J. W. Alexander, has offered to re-organize the Ross Can Co., Limited, of Bowmanville, Ont., manufacturers of fibre and other containers, providing the penalty clause in the bylaw is reduced to a reasonable limit. Recently operations were suspended by the company and it is said that it will require an additional \$50,000 capital to liquidate the obligations of the present company and provide additional working capital. The prospects for the industry resuming at an early date are bright.

Supplementary letters patent have been issued to the Sarnia Paper Box Co., Limited, of Sarnia, increasing the capital stock of the company from \$50,000 to \$150,000.

The Compton Lumber Co., Limited, Montreal, has been organized with a capital of \$50,000 and among the powers of the company is to deal in paper, pulpwood and wood pulp. Among the incorporators are J. M. Savignae, Joseph A. Hamelin and Joseph P. Lanctot.

One of the largest organizations which has been incorporated in some time, is Lumber and Pulpwood of British Columbia, Limited, with a capital stock of one million dollars and headquarters in Toronto. It is understood that the organization is composed of Montreal, Toronto and St. Catharines capitalists and they own about fifty square miles of timber in British Columbia near Fort George, which they will proceed to develop and erect a large saw mill of one hundred thousand feet cutting capacity a day.

The company has wide powers and among them is to deal in pulp, pulpwood, fibre board, pulp board etc. and to acquire standing timber and timber lands. The lumbering end of the business will be given attention first before the company directs its energies to the pulp and board departments.

To manufacture buy sell and deal in inks, mucilage, carbon paper, stationery, paper, boxes etc. a charter has been granted to the Acid Proof Ink Co., Limited, of Toronto, with a capital stock of \$40,000. The new company will take over the business and assets of the Acid Proof Ink Co., 521 King street west, Toronto.

A charter has been granted to the Muskoka Publishing Company with a capital stock of \$25,000 and headquarters in Braebridge, Ont. The company is authorized to do a general business as printers, stationers and publishers and to acquire the good will and assets of the publishing business now known as The Muskoka Herald.

Letters patent have been granted to the Grand Army of Canada Publishing Co., Limited, with a capital stock of \$40,000, and head office in Toronto. The company is authorized to carry on a general publicity and advertising business in all its branches. Among the incorporators are Stanley J. Brown, Hugh McLeod and V. K. Batchelor, all in Toronto.

Telbax of Canada, Limited, with headquarters in Windsor, Ont. and the capital stock of \$300,000, has been federally incorporated to originate, compose and advise forms of advertising and to conduct any other business pertaining to printing, lithographing, stationery, account book making and to carry on as importers, dealers and manufacturers in paper, pulp and paper substitutes of all kinds. Among the incorporators of the Company are H. J. Neal, J. C. Seofield and W. D. Roeh, Windsor.

A provincial charter has been granted to the Canadian Vegetable Parchment Co., Limited, with headquarters in St. Catharines, Ont., and a capital stock of \$150,000. It is expected that the new plant at Merriton will be manufacturing toward the latter end of

next month and the equipment is now being installed. The output will be about eight tons a day of genuine vegetable parchment. The interests associated with the Garden City Paper Mills are closely allied with the Canadian Vegetable Parchment Co.

A member of the Canadian Vegetable Parchment Co., Limited, of St. Catharines, stated this week that the company would meet in a few days, now that its charter has been obtained, to elect officers. Good progress is being made on the installation of the equipment of the plant and the buildings are completed. It is practically assured that operations will start by December 1st and the industry will be in a position to supply vegetable parchment paper to the trade for all requirements for the month of December.

The Canada Paper Co. of Wind-scor Mills, Que., have St. Anne River limits and are laying out working plans but the company do not expect to start cutting until next season.

The International Paper Company, Limited, is erecting at Three Rivers, Que., a plant that will comprise all told a chain of eighteen individual units of buildings. Already a number of these are under way. One of these, the power plant, will cost \$15,000. Already more than two hundred men are working on the building of the plants, which will cost in all six million dollars.

Charles V. Syrett, manager of the Victoria Paper and Twine Co., Toronto, who recently returned from an extended trip to Great Britain, was welcomed home by the travelling staff and heads of departments of the company, who tendered him a supper in honor of the occasion.

T. B. Little of T. B. Little and Co., wholesale paper dealers, Montreal, spent a few days in Toronto this week calling upon the trade.

A charter has been granted to the Triangle Lumber Co., Limited, with head offices in Toronto and a capital stock of \$500,000. Among other powers conferred on the new organization is to manufacture and deal in pulp and paper. The company will acquire the limits and camps of Boivin, Black and Jemmett of Sudbury and carry on extensive operations. J. H. Black of Toronto has been elected president of the company, Matthew Boivin, vice president, and D. L. Jemmett of Sudbury, *sec.-treas.*

The Nashua Gunned and Coated Paper Co., who intend establishing a Canadian branch factory in Peterboro, have for many years been doing a large business in Canada. Their main office is in Nashua, N.H. and the company have mills at Nashua, N.H., Middletown, Ohio, and Dansville, N.Y. The company manufactures coated paper of every description, gummed cloth and paper specialties, cloth lined stocks, shoe and box manufacturers' materials, glazed and plated papers in roll or sheet and waxed papers. James R. Carter is president; Winthrop L. Carter, treasurer, and George H. Lowe, secretary.

#### ADJOURNMENT OF NEWSPRINT HEARING LIKELY.

An order issued by the Paper Controller officially extending the \$69 price to the end of October, and speculation regarding Thursday's probe hearing, were the features of the Canadian newsprint situation as reflected at Ottawa up to early this week.

The opening of the inquiry on Thursday was of course the big thing that heads of the mills were looking forward to. What was going to happen no one could prophesy, but there seemed to be a feeling

prevalent that something big was in the air. On Monday it was heard in well informed quarters that a committee of the manufacturers was to meet a committee of the publishers for the purpose of talking over the situation with a view of arriving at a solution of the problem. As the government's auditors are still working on the books of one of the mills it seems probable that another adjournment will be necessary.

At the present time the E. B. Eddy Company is being simply deluged with orders to supply the Canadian trade. The mill, though it is working night and day and running to 105 per cent capacity, is still unable to meet the growing demand for its newsprint paper.

Woods operations of both the E. B. Eddy Company and the John R. Booth are going ahead at a fair rate. Many extra camps have been established throughout the Ottawa Valley, but owing to a continued slight shortage in labor all of them have not yet been filled.

#### RIORDON BLEACHING MORE PULP.

The Riordon Pulp and Paper Company at Hawkesbury have recently extended their capacity for bleached sulphite pulp so as to furnish an extra 25 tons a day of this material. They have found it necessary to increase the output of the bleached product in order to supply the insistent demands of their customers. A number of improvements have been made so that this pulp is of very high quality, in fact it is probably not surpassed in strength, color and cleanness by anything made on the continent and it would be hard to conceive of even the Scandinavians turning out a better product, unless perhaps hand picked pulp. The increasing demand for this product and the fact that even foreign countries specify "Maple Leaf" shows that it has an established reputation and does honor to the Dominion.

The new Kipawa plant will be making the highest possible grade of bleached sulphite pulp by the first of the year. Instead of the first unit being only 100 tons the growth of the business has made it necessary to include an extra digester and corresponding other equipment in the first building operations so that the initial output the first of the new year will be about 125 tons, instead of the 100 tons originally anticipated.

Situated on the Ottawa River, at the outlet of Gordon Creek and adjacent to the Dominion government dams forming the toe of Lake Timiskaming the site of this new pulp mill is ideal. Pulpwood may be obtained from any or all of four distinct sources of supply: (1) From the northern end of Lake Timiskaming by towing; (2) from the Kipawa Lake district through Kipawa River and chutes to Lake Timiskaming, and thence to plant by towing; (3) from the Kipawa Lake district through Gordon Creek, which is an improved creek for lumber interests; and (4) from the south by rail over the Mattawa-Timiskaming branch of the Canadian Pacific Railway.

It is gratifying to note the growth of the bleached pulp industry in Canada which is indicated by the operations of this company.

#### GOOD BUSINESS TO BUY BONDS.

The people of Canada are coming to realize that the prosperity of the Dominion depends very largely on the volume of export business. Some of the best markets are in countries that will need credit. The problem is largely solved by BUYING VICTORY BONDS.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, October 6.—Business in the paper line swings along with steady strides with the mills getting further behind in orders and jobbers complaining of delayed deliveries. It would be difficult to find a depression grinch in the paper business to-day and the one regret is that orders are coming so rapidly that it is not possible for the mills to give that service and attention to customers which they would like to give. They are doing their best under very trying circumstances. Newsprint is growing scarcer all the while and some prices are offered for spot deliveries that have been unheard of in previous years. There is no argument regarding quotations. The main question is to obtain supplies. Printers are all busy and there is much going on in the way of fall announcements from mail order houses, manufacturers and others. Several printing establishments in Toronto are working over-time and can not then overtake the business in hand.

Book mills continue to be favored with large orders and as the autumn months advance there is every indication that the volume will keep up. Ground wood pulp is very active and prices are firm. With the increasing cost of getting out pulp wood, there is likely to be an advance. It is stated that sulphite pulp will take another jump this month and, if this is the case, several lines of paper will be increased accordingly. Shipments are now going across the sea in gratifyingly large volume and all mills are pretty well sold up. The announcement that the Wayagamack Pulp and Paper Co. will increase production is evidence of the splendid demand for kraft paper and it is understood that the price may be raised within the next few days. Coated paper plants are exceptionally busy and find it impossible to catch up with their orders.

The best evidence that Canada is the coming paper country is furnished in the number of new concerns which are coming to the front and the extensions to existing plants. There has not been during the past five years as much construction work under way in the pulp and paper world as there is at present and in a few weeks another new line of paper will be placed on the Canadian market when the Canadian Vegetable

Parchment Co. will be making that product. Every Canadian trade commissioner is calling attention to openings in other countries and Canadian firms would like to be in a position to take on more of this business but that is impossible owing to heavy demands. A representative of the trade, who returned to the East last week from British Columbia, speaks hopefully of the great place which that province is bound to take in the near future as a busy pulp producing centre and believes in a few years B.C. will rival Quebec in the tonnage of output. All the mills there are rushed and certain of the splendid future of the industry.

It is a long time since paper box factories have been as busy as they are at present and containers are being used more and more for lines which a few months ago were sold in bulk. Box boards mills have all that they can do and prices are firm.

Production is being speeded up in all plants and help is plentiful. Shipping conditions are very fair and generally there is little to complain of in the trade. In the rag and paper stock market there has been a temporary quietness and prices have taken a drop in a few lines. Soft white shavings are down, but white blanks are very firm. Magazine, light book and ledgers have been rather dull for some days and prices have sagged. Any slackness is, however, thought by dealers to be temporary. The mills have not been buying cotton rags as freely as formerly and the decreased requisitions has caused a slight weakening in prices. Roofing rags are also weaker.

There have been no changes in prices in Canadian paper products for several weeks now and whether they will come soon in the nature of an advance or continue at present figures no one seems to know. He who would prophecy under existing circumstances would, according to one authority in the trade, be either a mountebank or an ignoramus. The mills are pushing along as best they can, have not taken advantage of an abnormal situation and are catering to their customers on a fair, square basis. There is no doubt that if prices ascended the purchasers would pay the same with little or no complaint. Whatever may be said against certain members of the trade by a sensation loving daily press, there is no charge of

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profiteering that can truthfully be laid at the door of the Canadian paper trade. It may be that profits, as revealed in the annual statements, look large but when the huge investments are taken into consideration together with the many lean years that the industry had to face—years when so few capitalists could be found to advance money for Canadian paper undertakings—the fair minded citizen will not complain at the fact that the paper maker is today coming to his own. All offerings of securities continue to command high prices from the fact that the general investing public have confidence in the men behind this great national enterprise who are endeavoring to bring Canada to the front as an exporting country and expand her activities, at a time when the Dominion is sorely in need of exporting more and importing less. Mills are ordering additional equipment and this in turn keeps many machine shops busy at a period when capital is rather diffident in regard to entering new spheres of expansion. The Canadian paper industry stands today as the pace-maker industrially. In the production of newsprint and sulphite pulp the next year should witness greater strides than ever, with an additional five or six hundred tons of news in sight, and about three hundred of sulphite within the next few months.

#### Pulp Prices.

	F.O.B. Mill.
Groundwood pulp .....	\$33.00 to \$35.00
Sulphite, news grade .....	\$75.00 to \$80.00
Sulphite, easy bleaching .....	\$92.00 to \$95.00
Sulphite, bleached .....	\$115.00 to \$120.00
Sulphate .....	\$87.50 to \$90.00

#### Rag and Paper Stock Prices.

	F.O.B. Toronto.
No. 1 white envelope cuttings .....	\$4.75
No. 1 soft white shavings .....	\$4.00
White Blanks .....	\$1.75
Heavy Ledger Stock .....	\$2.65
No. 1 magazine .....	\$2.39
No. 1 book stock .....	\$1.75
No. 1 manilas .....	\$2.30
No. 1 print manila .....	\$1.50
Folded news .....	\$1.10
Over issue, news .....	\$1.00
Kraft .....	\$3.25
No.1 clean mixed papers .....	.90c
No. 1 shirt cuttings .....	14 <sup>1</sup> / <sub>2</sub> c to 15c
No. 1 unbleached cotton cuttings.....	13c to 13 <sup>1</sup> / <sub>2</sub> c
No. 1 fancy shirt cuttings .....	10c to 11c
No. 1 blue overall cuttings .....	11c
Bleached shoe clip .....	13c
White cotton hosiery cuttings .....	13 <sup>1</sup> / <sub>2</sub> c
Light colored hosiery cuttings .....	11c
Now light flannellette cuttings .....	10 <sup>1</sup> / <sub>2</sub> c
No. 2 white shirt cuttings.....	11c
City thirds and blues (repacked), No. 1.....	41 <sup>2</sup> / <sub>2</sub> c
Flock and satinettes .....	\$2.50
Tailor rags .....	\$3.00
Gunny bagging .....	33 <sup>1</sup> / <sub>2</sub> c to 4c
Manila Rope .....	53 <sup>1</sup> / <sub>2</sub> c to 6c

#### NEW YORK MARKETS.

New York, October 4.—While the snap to the demand for paper, which has been an outstanding feature for some time, has disappeared to an extent, the market having settled down to a more even keel, business of broad volume continues to pass and there is a very firm undertone to prices. Evidently consumers of some classes of paper are satisfied for the present that they

have covered requirements for a time through orders placed with mills and are not as anxious buyers as they have been, presumably feeling that it will be to their advantage to remain out of view as buyers as much as possible. Nevertheless, mills in all parts of the country are running at capacity and have a sufficient number of orders booked to keep them busily engaged for several months. Rather than looking upon the easing up of demand from some quarters with apprehension, manufacturers view the withdrawal of buyers as affording them a respite to catch up with a portion of their deliveries.

The market for newsprint is characterized by extreme firmness. Consumption shows no diminishment; on the other hand, it appears to be increasing daily. New York newspapers are almost every day printing announcements regarding the breaking of previous records in the volume of advertising carried, which of course, means only one thing; namely, that publishers are using more and more newsprint. Offerings of spot lots of newsprint have virtually entirely disappeared from the market, mills being sold up in such volume that they haven't any surplus to sell. Roll news for immediate delivery has sold at 5.50 cents a pound at the mill and bids of 5.25 to 5.35 cents are frequently noted. One well known import house in New York is offering newsprint brought from Sweden for prompt delivery. The price asked for this Swedish news is around 5.80 cents, and while the probabilities are that little, if any, of it has been marketed here as yet, offerings are significant.

The fine paper situation is firm and reports from mills tell of continued activity. Manufacturers, practically without exception, are booked well ahead and are shipping out their product as soon as it becomes available. Prices are strong, and mills are repeatedly advancing quotations on this or that grade of bond, linen or ledger paper, and are being obliged to turn down orders owing to their inability to accommodate more business for the present.

Coarse papers are moving in a steady manner and at firm prices. Merchants the country over are laying in stocks in preparation for the pre-holiday trade and are not stinting in their buying, so that mills are being offered more business than they can handle. Jobbers of wrapping papers report a good demand and say that irrespective of the efforts made they are unable to pile up appreciable stocks, being enforced to make deliveries to customers about as soon as they receive shipments from mills.

The tissue paper market is firm and No. 1 white tissue is readily selling at \$1.15 to \$1.25. Manila tissues also are quotably steady and in good demand. Book papers rule firm, and while demand has fallen off as a result of the strike of printers and pressmen in New York, mills as a rule have all the business they can accommodate. Should the local strike, which has caused upwards of 250 periodicals to suspend publication, last for any appreciable length of time, there is no question but that the effect on the book paper market will be material, at least for a time. On the other hand, publishers are unlikely to halt deliveries for a couple of weeks, and the movement of paper therefore will (probably) not be seriously interfered with, for common opinion in the printing trade is that the strike will not continue more than a fortnight.

Boards of all kinds are in consistent demand and mills are operating at maximum production. Prices hold strong and the tendency is upward. Chip board is selling freely at \$60 to \$65 a ton and news board at



# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

\$65 to \$70, with reports heard of some transactions at \$5 per ton above these figures.

**GROUND WOOD**—Mechanical pulp is finding a ready sale at strong prices. Offerings are light and grinders report being sold up for some time ahead, so that whatever pulp is found available for prompt shipment is quickly absorbed by consumers. Newsprint manufacturers are constantly coming into the open market to purchase ground wood to augment their contract supplies and are meeting the prices asked without hesitancy. Spruce pulp of prime quality is readily selling at \$35 to \$40 a ton at the grinding mills, with the bulk of current business done at nearer the higher than the lower level. Dealers say that they could doubtless transact a much larger business could they get the pulp to offer to users. As conditions are, producers are mainly endeavoring to keep their regular customers supplied and are offering very sparsely in other directions.

**CHEMICAL PULP**—Although demand for chemical pulps is not as brisk as it has been recently, the market is characterized by much activity and there is no supply going abegging. Producing mills as a rule have contracted for their output over the next several months and are reluctant to enter into further engagements, intimating that they expect prices to go higher. Unbleached sulphite of newsprint quality is selling freely at \$70 to \$75 a ton, and most manufacturers are refusing to book forward orders under the higher figure. Domestic soda pulp is actively sought and is commanding around \$95 f.o.b. pulp plants, while domestic kraft is moving in a consistent way and in good volume at a price basis of \$90 per ton. Domestic bleached sulphite is difficult to locate in round lots, and mills having this grade of pulp for sale ask 6 cents or more a pound for prompt shipments. No fresh developments are reported in the foreign pulp situation. Occasional shipments are coming in, but the pulp arriving from Scandinavia is practically all sold before it reaches here and has little or no influence on the market. Quotations range from 7.50 to 8 cents on bleached sulphite, 4.75 to 5 cents on unbleached sulphite and 4.50 to 4.75 cents on kraft.

**RAGS**.—The continued influx of rags from European countries keeps the domestic market rather quiet. Consuming mills apparently are giving preference in their buying to foreign rags and are keeping as much out of the domestic market as possible, both for the reason that they are securing imported stock at relatively cheaper prices than are asked for domestic rags and that they believe it will prove to their advantage to refrain from purchasing domestic material for a time. Dealers are still imbued with confidence that mills will soon resume buying on a broader scale and that they will then obtain the prices desired, and only limited amounts of rags are being offered at conces-

sions. Nevertheless manufacturers seem to be having no great difficulty in buying at reduced figures, which would indicate that at least some packers are anxious to move accumulations. No. 1 repacked whites are quoted at around 8 cents a pound f.o.b. New York and thirds and blues of repacked quality at 4.25 cents. New white shirt cuttings have sold this week at a decline, purchases being reported of No. 1 packing at 14.50 to 15 cents New York. Roofing rags are a bit lower in price, sales being noted at a basis of 2.70 to 2.80 cents f.o.b. shipping point for No. 1 satinetts.

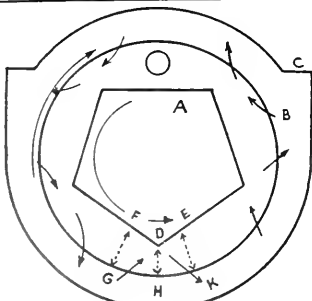
**PAPER STOCK**—Buying of the low grades of old paper by board mills has featured the market this week. No. 1 mixed paper and several other of the cheaper qualities have moved in extensive volume and at firm prices, while flat stock has continued to ease off in price in the absence of important demand. Board manufacturers are freely bidding 85 to 90 cents per hundred pounds for No. 1 mixed paper and 95 cents to \$1 for flat folded news. White blank newspaper has been actively sought and has sold at 1.85 to 2 cents per pound. Kraft paper also has moved in good volume at a price range of 3.50 to 3.65 cents New York, while shavings are quotable steady at around 5.50 cents for No. 1 hard whites and 4.15 to 4.25 cents for soft white shavings of No. 1 grade. Heavy books and magazines are offered in sizable amounts at 2 cents a pound New York and there have been few buyers in view at this or other prices. Mills consuming flat stock appear to have their present requirements taken care of and are indifferent to offerings.

**BAGGING AND ROPE**—Demand for old Manila rope has been a little quieter during the past few days, yet prices are maintained and there is still considerable buying power in the market. Dealers report sales at between 6.25 and 6.50 cents a pound f.o.b. New York, and about all the rope offered is being absorbed although consumers are not bidding as actively for supplies as they were. Bagging is largely neglected and

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If interested, address P. O. Box  
516, NIAGARA FALLS, N.Y.



### This cut illustrates the principle of P.A.P.A. screen

The motion of the stock is caused by the revolving of the polygonal drum A with higher speed and in opposite direction of the screen cylinder B.

The distance D-H is smaller than the distances F-G and E-K. When drum A revolves and point D comes on the extension of the radius on which point E is located, the space in this point between the polygonal drum and the screen cylinder will be smaller and consequently a pulsation outwards will take place. When point D passes from the extension of the radius on which point F is located, and goes over where it is on the diagram, the space between the drum and the cylinder becomes larger and an inward suction will take place.

Ask us for further particulars.

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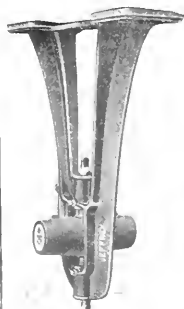


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C H A I N S  
For Pulp and Paper Mill  
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are not "just chains", but chains which combine all the qualities and features demanded where greatest production and continuous operation is to be obtained.

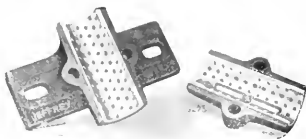
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**MONTREAL**



Jeffrey Bearings equipped with Graphite Sheet Lubricator

wear much longer than other Bearings—and save 75 to 90 per cent in Oil and Grease Bills.



prices are easy. No. 1 scrap bagging is quoted at around 3 cents New York. No. 1 gummy at 3.50 to 3.75 cents and roofing bagging at 2.50 cents.

**PREVENTING DAMAGE TO LOGS IN STORAGE.**

Logs stored on skidways or left in the woods during the summer months may be damaged in a number of ways, principally through sap staining, insect attack, decay, and checking. Certain species of wood are more susceptible to injury than others, and the extent of the injury is also dependent on the time of cutting, the climate, and the storage conditions. The possible financial loss and amount which can profitably be expended to prevent it will be influenced according to the United States Forest Products Laboratory at Madison, Wisconsin, by the value of the logs, the purposes for which they are to be used, and the probable extent of the injury. Where conditions permit, one or more of the following methods may be found useful in minimizing the loss.

**Storing under water** will prevent blue stain, checking, insect attack, and decay. (The logs would, of course, be subject to marine-borer attack in salt or brackish water along the sea coast where these pests are active.) Wood of any species completely submerged in water will resist decay indefinitely. Alternate wetting and drying, however, favor decay.

**Storing on skids** in such a way that the air can circulate freely around each log will prevent the accumulation of moisture and thus retard decay. It will favor checking, however, and, unless the bark is removed, will have little effect in preventing insect attack. The skids should be located where there is good air circulation, and they should be raised off the ground. Weeds and brush should be cut down.

**Peeling the bark** completely from the logs will do much to eliminate insect attack and retard decay, by removing the protection required by many insects, and by allowing the logs to dry more rapidly. It will favor checking, however.

**Painting the ends** of the logs with paints of the proper kind will very materially retard the loss of moisture and thus retard end checking. If the logs are peeled and properly piled on skids, painting should not increase the danger from decay or sap stain. A yellow ochre or barn paint will do fairly well for this purpose.

**Painting the peeled surfaces** with coal-tar creosote will be useful in preventing sap decay, and if applied soon enough may be effective in retarding sap stain. Any grade of creosote in common use for wood preservation will be suitable, and extensive oils are unnecessary.

All the methods described except water storage may be employed at the same time and to good advantage if circumstances justify the expense.—Technical Notes, U.S. Forest Service.

**CLAIM AGAINST PULP COMPANY.**

At St. Catharines, Chief Justice Falconbridge reserved judgment in the action brought in the Supreme Court by the Canadian Government on behalf of the King against the Thorold Pulp Company, claiming \$16,900 for the amount of water alleged to have been used for power purposes from the Welland Canal above that allowed in the lease. The company denied that it used or wasted surplus water and offered to pay \$8,474 or any excess water tax and asked for costs of the action.

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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No. 42

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# EDITORIAL

## *PUT IT THROUGH.*

A Canadian characteristic is the assurance with which a big job is tackled and the energy with which it is put through. The Canadian people have earned an enviable reputation for being able to accomplish big things, to "put it across." The new Victory Loan is a big thing. It will take a large part of our reserve financial and productive energy to put it through. Let's do it.

## *ON AMERICAN MILLS MOVING NORTH.*

A few weeks ago an American paper journal ventured the opinion that one of the reasons for the migration of the American Pulp and Paper Industry is a political one. For many years in the United States this industry has been operating with a sword hanging over its head and the uncertainty as to when it would drop and how deeply it would cut has without doubt been one of the factors restraining the development of the industry in the United States. On the other hand the Provincial Governments in Canada recognized the value, both as a populating and an economical factor in the development of the Dominion and have encouraged and assisted the establishment of pulp and paper mills to develop their natural resources as well as to increase the provincial revenues. The building of mills means the use of timber from Crown Lands and the payment of licenses and dues for the cutting of the timber. This means a considerable addition to the revenue of the province, while the distribution of wages, which the ready sale of such products makes possible, adds to the prosperity and happiness of the population. From the provincial point of view, therefore, Canada is certainly the land par excellence for the establishment of pulp and paper mills.

The Dominion Government, although it may have been acting according to what was intended for justice, at least as affected by circumstances, has seen fit to take an almost exactly opposite attitude. Instead of encouragements, there have been restrictions and hindrances. These were originally placed as a war measure for the assurance of the paper required by newspaper publishers. The war now has been over for nearly a year, but as the treaty has not been officially ratified by the Canadian Parliament, the restrictive measures continue in force, so that the publishers continue to benefit and the industry continues to be hindered. The mills which do not export their product of newsprint paper are those which are most directly affected, although restrictions which apply to them cannot fail but be somewhat felt by all the others, since the power of

embargo may be exercised at any time against even the mills that export their product. Of course, these restrictions apply only to newsprint paper.

Since the general public is quite satisfied that the paper manufacturers are at least as honest and fair as any other group of business men in the price they charge for their product, other pulp and paper manufacturers have not been so harrassed.

We certainly extend a most hearty welcome to our American friends who are building the extensive new plant down the St. Lawrence, and no doubt they already understand that Canada is not entirely free from political interference in the conduct of an important national industry. They will doubtless realize that until 1914 the Canadian publisher was not unduly critical or suspicious of the honesty and fairness of the manufacturer from whom he bought his paper. The war conditions that caused temporarily a panicky state of mind among them have now practically passed, and there are hopes that these two industries will soon again be on friendly business relations. With the passing of the emergency which caused a fear lest a newspaper find itself without its raw material there will also pass any fear of restrictions on the free export of newsprint paper manufactured in Canada.

It does not seem probable that there would be a sufficient change in tariff policy in the United States to cause a replacement of a duty on newsprint paper. One reason for this is the power and influence that the press has had in the past and will doubtless continue to have with the members of Congress and another is the fact that the American publisher, whether he likes it or not must come to depend more and more on the Canadian forests for his supply of paper. Placing a duty on paper would be of no assistance whatever to either American mills or American publishers.

No agitation on the part of American publishers or paper manufacturers is likely to change the attitude of Canadian Governments with regard to the propriety as well as the advantage of requiring the conversion of such wood into pulp and paper as is cut on Canadian Crown Lands. In fact such agitation seems merely to confirm the justice as well as the necessity for such regulations. Still another factor in the movement of newsprint mills north is the recognized stability of Canadian labor conditions. There are a number of possible explanations for the fact that Canadian industries have been little disturbed because of the dissatisfaction of the workmen, but the condition of things is certainly attractive to the industry which wants to live harmoniously with its work people, to deal fairly with them and to

industry created by the Government of the country in which it locates.

We can safely rely on the continuance of the encouraging attitude of our Provincial Governments without their attempting to patronize, and we can also look forward with assurance to an early change in the attitude of the Dominion Government to any industry which means so much to the industrial and economical welfare of Canada. So it is with considerable confidence that we extend again a hearty welcome to our American friends and also to our British cousins to come to Canada and help to develop and enjoy the unmatched resources of this country.

#### DISILLUSIONED REGARDING PARLIAMENT.

When the editor of the Pulp and Paper Magazine came to Canada, about three years ago, he had the notion that the Canadian Government was a dependable business organization, comparatively free from patronage and qualified to carry out a large undertaking in a straight-forward manner. While laboring under that illusion an editorial appeared in our columns supporting the idea that if the Government is right in assuming the responsibility of running a large part of the country's railway lines it should control and operate them all. We still believe the Government should not operate an industry in competition with private enterprise, especially when to do so is to place the burden of operating expense on the general public instead of on legitimate income. There are two ways to avoid such competition on the part of the Government. One is to buy up all the roads and the other is to leave them alone altogether. At first we supported the former plan, because, as stated, we believed the Canadian Government capable of conducting business efficiently. We are now disillusioned.

However great the advantage to a part of the people, the Government-operated roads can hardly be classed as paying propositions. No English-speaking government has yet shown itself capable of giving efficient, economical and satisfactory railway service. With the recent record of attempts in England and the United States and past performance of Parliament, surely the law-makers would we could say the "Business Administrators of the Dominion" at Ottawa will not saddle an enormous and apparently certain liability on the people without so much as "by your leave."

Such action is quite certainly *not the will of the people*.

"This is what 'Safety First' or being careful—means . . . and the end is, that the workman shall live to enjoy the fruits of his labor; that his mother shall have the support of his arm in her age; that his wife shall not prematurely become a widow or his child an fatherless; that cripples and helpless wrecks, who were once strong men, shall no longer be a by-product of industry."

#### COBWEBS.

A letter has just been received, addressed to the "Industrial and Economical Press." We plead guilty to both charges—the first from choice, the second from necessity.

"A night watchman in an American mill recently discovered that much stock was being lost in the pulp mill by going through the screen plates instead of passing over the end of the screen as he thought it was supposed to do.

An interesting advertisement appeared the other day in a Montreal paper. The heading was "Capitalist Wanted." It seems strange that any one should want a capitalist in these days, but a little thought will show that industry would not get very far without them.

Along with appeals to the people of Canada to subscribe liberally to the Victory Loan there should go from the people to Parliament a demand that the money be spent economically. Canada cannot afford to waste a cent. Why not let this be an "Order-to-Council"?

Many pulp and paper mills are doubtless rejoicing over the increase in available space for ocean shipments. It is to be hoped that this relief from competition among shippers for available accommodation will result in a decrease in freight rates to the other side.

The Industrial & Educational Press, which publishes the Pulp & Paper Magazine and other journals relating to Canadian industries, held its first annual family Thanksgiving Dinner on Monday night. Sixty of those on the pay roll as well as a number of guests had an opportunity of getting better acquainted with each other and of realizing the aims and opportunities of the organization.

A representative of the St. Maurice Valley News-Chronicle, of Three Rivers, recently visited the St. Maurice Paper Co., and the long journey through the extensive plant nearly finished him. He came away with at least an introduction to processes and products formerly only vague names. It is too bad all newspaper men and other users and dealers cannot become better acquainted with the manufacture of paper and that the manufacturer cannot see more of the processes through which his product subsequently passes.

"Ottawa must keep the 'pork barrel' closed," says the Financial Post. Good idea. It preserves the pork in more ways than one.

#### SAFETY NUMBER POSTPONED.

On account of power troubles from the main transformer station it will be impossible to get out that special Safety Number as had been planned for this week. It will be just as good when it comes.



# Centrifugal Pumps and their Use

Some Notes on Their Design, Application and Installation.

By F. A. McLean, Canadian Ingersoll-Rand Co.

Many people erroneously regard the centrifugal pump as a very modern invention, while as a matter of fact it is considerably older than the steam engine. The history of its invention is rather obscure but the credit for it is usually to a man named Desmeuse Papin, who lived in Hesse, Germany about 200 years ago. Like many other inventions, little interest appears to have been taken in it and it was allowed to lie more or less dormant until Andrews and Bessemer made some improvements on the original designs in the early part of the nineteenth century.

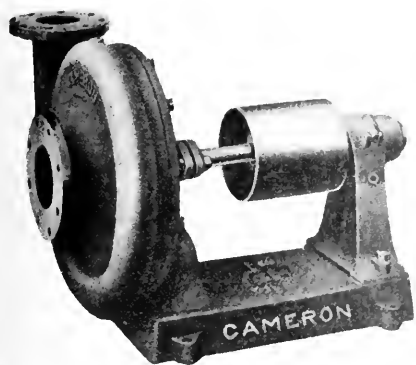


Fig. 1—Single Suction, Belt Driven, Open Impeller Type Pump.

Its first appearance in America was about the year 1819 or 1820 and it was improved by Gwynne and J. P. Appold, in 1848-1851. Appold's improvements were so far reaching that the most modern form retains many of the features which distinguished his design. Appold's pump was not affected by solids in the water, was capable of pumping continuously a volume of water equal to more than 1400 times its own weight and was found to be fairly efficient.

Centrifugal pumps were for many years considered only suitable for handling water in comparatively large quantities at very low heads and due to poor design and consequent low efficiency, were considered too wasteful to allow their wide adoption. The development of the direct acting steam pump to a higher state of perfection put the centrifugal in the background where it remained for a number of years. The ability of the centrifugal pump to operate at high speeds brought it into the lime-light again, due to the rapid advance which had been made in the development of the steam turbine and the electric motor, and the consequent need for a pump which could be directly connected to these types of prime mover, thereby gaining full advantage of the reliability, low maintenance cost and compactness of this method of drive.

The development of this type has now advanced to a point where it is possible to secure centrifugal pumps which will give most satisfactory and economical service on nearly all classes of low and high head in-

stallations for which a few years ago only reciprocating pumps would have been regarded as suitable. The simple rugged construction of the modern centrifugal pump, its long life and entire absence of trouble from water hammer and shock, naturally appeal to users of pumping machinery. In their simple construction and lack of valves, pistons, rods and other reciprocating parts, they present a radical contrast with the ordinary steam or power driven reciprocating pump. Due to the fewer wearing parts, they usually last longer, are not so much affected by semi-solids or solids in the liquid pumped, require far less attendance and generally operate with considerably less power.

## Types of Centrifugal Pumps.

Present day centrifugal pumps are made in two general classes, known according to the type of impeller used as either open or enclosed impeller machines. The open impeller comprises a number of spokes or arms which radiate from a central hub like the rotor in an ordinary rotary blower. The sides of the vanes or arms are usually machined to enable them to be run close to the side walls of the casing. The closer the blades run to the casing the less, of course, will be the loss from slippage of the water or other liquid being pumped.

When well designed and properly built, open impeller pumps will give quite satisfactory results in delivering a large quantity of water at a small head but the large amount of slippage, skin friction and surging or internal disturbance which become worse as the head is increased limit the efficiency of this type of pump. As inherent losses in these pumps are variable quantities, it is impossible for the designer accurately to predetermine the ultimate performance of the pump. Open impeller pumps are particularly adapted to handling gritty or dirty water and semi-solids, and for this reason have been widely adopted in pulp and paper mills and for pumping tailings, slimes, etc., in concentrating plants. The open impeller pump illustrated is made in sizes to handle from 200 to 8000 gallons per minute at heads up to 70 feet.

The enclosed type of impeller consists of a number of vanes or arms radiating from a central hub and en-

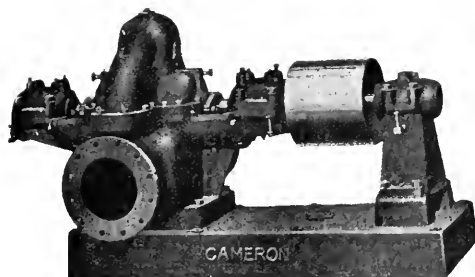


Fig. 2—Belt Driven Double Suction Volute Pump.

closed by discs on each side to form walls. In operation, the liquid which is being pumped is admitted at the centre of the eye of the impeller and passes around the shaft and through the impeller in channels formed by the walls and vanes. In single suction pumps the water passes in one side of the impeller only, while in the double suction type it enters on both sides. Due to this fact double suction impellers which are subject to an equal pressure on both sides are self balancing against thrust along the centre line of the shaft and are self balancing when operating at ordinary heads. Single suction pumps do not have this self balancing feature and consequently require thrust bearings.

With the enclosed impeller type of pump the liquid being raised passes through passages or channels of fixed form with a limited amount of leakage and considerably less disturbance than is the case with single suction impellers and the designer can thus quite accurately determine and control the performance of the pump over a broad range of requirements such as would be met with in different classes of service. For

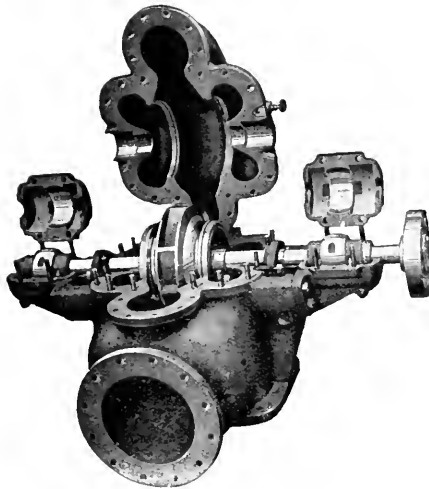


Fig. 3—Double Suction Volute Pump, with Casing Open Ready for Inspection.

this reason the enclosed impeller pumps will suitably meet all medium and high head pumping requirements where efficiency is essential.

#### Single and Multi-Stage Centrifugal Pumps.

Single stage pumps contain one impeller and are built for almost any capacity and will operate efficiently on moderately high heads, the larger sizes naturally being more efficient than the smaller. Single stage pumps are somewhat limited by the pressure existing between the suction and discharge chambers of the pump; the higher the head the greater the difference in pressure and the larger the loss from internal slippage and leakage and the more rapid the destruction of the internal parts. These factors reduce the head or pressure allowable per impeller or stage.

To overcome this drawback and permit the use of centrifugal pumps on higher heads and higher pressures the multi-stage types were produced. These consist of two or more impellers mounted on one shaft and running in a casing with passages arranged in

such a way that the liquid is led through the impellers in succession, each one adding its share to the total pressure required. By this arrangement pressures of several hundred pounds may be obtained from a single unit, the exact limit depending on the strength of the materials from which the pump is constructed and their resistance to the wearing or abrasive action of the liquid at high velocity. In pumps of the multi-stage type the liquid is discharged from all but the last impeller at a very high velocity and must be turned through a half circle or 180 degrees in order to enter the succeeding one, and this necessitates the use of baffle plates or vanes to reduce the speed of the liquid and convert it into pressure as soon as it leaves the impeller, so that it will pass to its successor with a minimum amount of disturbance and shock on the walls of the casing. These vanes or baffles are called diffusers.

In all multi-stage pumps some means of maintaining the correct alignment of the passages of the rotating impellers with those in the casing, and equalizing any end thrust that may take place is necessary. This is often accomplished by means of a hydraulic device in which the end thrust is absorbed by a body of water acting against a diaphragm or piston on the pump shaft. This device is only applicable when the pump is used with clean water and is very simple in construction, automatically and quickly adjusting itself to the variations in the load with practically no friction or loss of power. Sometimes it is necessary to pump liquids which contain grit or solids which would wear out the hydraulic balancer very quickly, and in such cases a marine or Kingsbury type of thrust bearing is used.

#### General Design.

To be successful a centrifugal pump should be well constructed mechanically, and its performance should comply with all of the requirements of the particular class of service under which it is to be used, and should show the highest possible efficiency when in use on that service. It should be of simple and substantial construction in all its parts and the rotating elements should be accurately balanced in order to reduce vibration. The bearings should be of ample size and accurately fitted, and provision should be made for their proper lubrication, in order to preserve the alignment and small running clearance between the rotating element and its casing which serve to prevent leakage between the high and low pressure portions of the pump. As in other classes of machinery, centrifugal pumps are no better than their bearings, from the standpoint of continuous operation, and the better proportioned these parts are the longer the life and the lower the maintenance cost.

All materials entering into the construction of the pump should be carefully selected in view of the duty to be performed, and care should be used in the various manufacturing and machining processes. The general design of the machine should be such as to allow ready accessibility to all parts without difficulty.

#### Principle of Operation.

The principle on which the operation of the centrifugal pump is based is quite simple and easily understood. The liquid to be pumped is speeded up or accelerated by passing it through the revolving impeller which creates both pressure and velocity, the velocity being subsequently converted into pressure

in the stationary discharge passages. It is however, a very complicated problem to design and construct a pump to deliver a definite quantity of water against a given head at a certain fixed speed, with the highest efficiency. An experienced designer can, however, predict within a very small percentage of error on either side, both the capacity and brake horse-power required at the normal operating point as well as over a wide range of variation from such conditions as free discharge against little or no head to a closed discharge with no liquid flowing. The solution of problems of this nature, of course, requires a thorough theoretical knowledge of centrifugal pump design and the examination of a vast amount of data obtained ex-

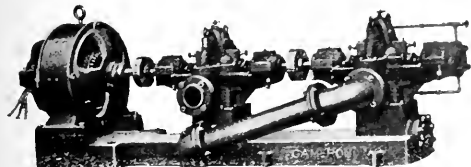


Fig. 4—Motor Driven Double Suction Volute Pumps in Series.

perimentally from pumps intended for similar service conditions. For this reason, the volume of output and reliability of the pump manufacturer, other things being considered, may be regarded as pretty good indications as to whether the pump will fulfil the requirements to the degree claimed by its maker or not.

To produce an efficient and satisfactory pump requires not only a correctly designed impeller, but the casing itself must be so made that changes in the velocity of the liquid will take place gradually without undue shock and disturbance. To put into practice all of the little details which are carefully worked out by the designer requires careful and accurate shop work of a high order, with rigid supervision and inspection throughout the various steps of manufacture. As an assurance against defects in material and workmanship, it is also essential that finished machines should be subjected to a thorough test under conditions like those which will be met in the field, or even more stringent if possible. When this method is thoroughly carried out, any mistakes or discrepancies are detected and properly corrected before the pump leaves the shop, and where this testing is not properly carried out, it is impossible for the manufacturer honestly to guarantee the performance of the pump when it is finally put in service. To get the very best results each installation should be treated as a problem by itself, as in this way it is possible to obtain far higher efficiencies than if the equipment is chosen haphazardly on a shelf hardware basis, on the recommendation of a small dealer or jobber.

#### Some Applications and Uses of Centrifugal Pumps.

Centrifugal pumps may be driven by means of belts or gears from steam engines, steam turbines or electric motors, water wheels or any other source of power available, or which may be most convenient or best suited to the location in which the pump is to be used. When operated by electric motors they readily lend themselves to the installation of automatic starting and stopping systems of the float switch type. Driven by steam turbines they are more economical than

steam pumps, operating on less steam and requiring less lubrication. The compactness of such units and their freedom from valves, more or less complicated motions, and sliding surfaces reduce the attendance costs in no small degree.

#### On Water Works Service.

During the last few years motor driven centrifugal pumps have been widely adopted for waterworks service in small cities, towns and villages. Where they are used to pump water to a standpipe or elevated tank they are often arranged to be started and stopped automatically by either a pressure regulator or float switch. When used with a system of the direct pressure type, they may be run continuously, maintaining the pressure and delivering only such water as may be drawn from the mains. In some locations where a part of the system is at a higher level or at some distance from the station, it is necessary to maintain sufficient domestic pressure at the pumping station to supply the greatest demand and to install a centrifugal pump to act as a booster in the line which requires the higher pressure. A booster pump may be operated continuously and allowed to "float" on the line thus adding a fairly constant net pressure irrespective of the amount of water which may be taken from that line. A common practice is to use moderate pressure lines for domestic service and increase this largely in case of emergencies such as fire service, etc. Motor driven centrifugal pumps usually being fitted with constant speed motors are not adaptable for more than one pressure, and it is often necessary to install two or more duplicate sets designed for ordinary service which may be operated in series to obtain a larger pressure for fire service.

It is often desirable when installing centrifugal pumps for fire or other service where great reliability and freedom from interruption is essential, to either duplicate the equipment or to provide the pumps with more than one form of driving power.

An interesting instance of this kind is the installation at the Public Markets, St. Boniface, Manitoba, which comprises a No. 5 Cameron Class DV horizontal, double suction volute pump with a capacity of 500 U. S. gallons per minute, operating against a total head of 130 feet, at a speed of 1755 R.P.M. This pump is

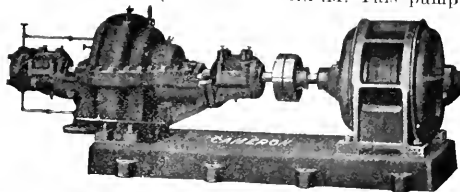


Fig. 5—Two Stage Motor Driven Turbine Pump.

direct connected at one end to a 30 H.P. Westinghouse, 550 volt, 60 cycle, 3 phase induction motor, and at the other end to a 35 H.P. General Electric Steam Turbine, in such a way that either the motor or turbine may be used as desired thus making the equipment entirely independent of power failure. This arrangement is very compact, and has proved very efficient and economical in operation.

Crank and flywheel pumps have been displaced in many localities by turbine driven pumps connected to condensers which have proved much more reliable and economical than the best triple expan-

sion crank and flywheel pumps. The installation and yearly operation costs together with their compactness permitting their use in small buildings and without special foundations are some of the reasons why they are displacing other types for municipal service.

#### For Boiler Feeding and General Mill Service.

Centrifugal pumps are ideal for boiler feeding purposes and are usually either motor or steam turbine driven, as may be most suitable for a particular installation. Motor driven feeding pumps are generally allowed to operate continuously at full speed, maintaining a practically constant pressure in the feed line for a large range of capacity. The amount of water which is fed to the boiler can be controlled by a valve in the feed line without danger of creating a dangerous pressure in the boiler as — due to their construction—centrifugal pumps will not build up a pressure greater than 15 or 20% above normal even when the discharge valve is closed.

Steam turbine driven boiler feed pumps may be operated in the same manner, but are often equipped with pressure regulators similar to those used on ordinary steam pumps to maintain a fairly constant differential between the steam and feed line pressures, particularly where the variation in steam pressure is considerable. The amount of water fed to the boiler by either steam or electric driven centrifugal pumps can be regulated without touching the pump, and there are no valves, rods or large packings to be looked after. In case of loss of suction there is no danger of breakage by water hammer as is the case with the ordinary reciprocating pump.

For circulating and other low pressure service steam turbine, steam engine or electric motor driven single stage pumps are generally used, while for higher pressures such as required in boiler feeding, etc., steam turbine or electric driven multi-stage pumps are more suitable.

Pumps made of corrosion resisting materials may be obtained from some manufacturers, and are widely used in chemical plants, packing houses, pulp and paper mills, tanneries, breweries, textile mills and many other industries.

*To be Continued.*

### RUMOR O'BRIEN ABOUT TO BUILD.

The construction of a large pulp and paper mill is expected to begin next year at the north end of Lake Temiskaming. The M. J. O'Brien, Limited, a twenty-million-dollar corporation which controls the O'Brien Mine at Cobalt and the Miller Lake-O'Brien Mine at Gowanda, as well as other large interests, is involved in the enterprise through having owned control of a part of the great water power of the Quinze River, the whole of which would make it possible to generate upwards of 100,000 h.p., or as much as 250,000 h.p., according to some estimates.

During the past year or so preliminary surveys have been carried on, and with the result that, should economic conditions appear to be reasonably favorable, and with reasonable assurance of an adequate labor supply, the big project is expected to be launched.

The waters tributary to the Quinze River and the Quinze lakes flow through territory containing vast saw-wood resources, which, with care, appear to be practically unlimited for several generations—Toronto

### TRANSPORTATION TOPICS.

#### Increased Charges for Local Switching.

Tariffs have just been issued by the various railroads providing for new rates covering local intra-plant and reconsigned switching of carload traffic at practically all stations on Eastern Canadian lines.

The new rates for a local switching movement within the yard limits of any one station range from 11½¢ first class to 4½¢ tenth class, with a fifth class rate of 5½¢, minimum weights being in accordance with Canadian classification.

For intra-plant switching, that is for movement between sidings within the same industrial plant, a special charge is provided of 1¢ per 100 lbs. (minimum \$5.00 per car).

Specific local switching charges are also provided at Montreal and Toronto terminals, also at a number of other points where a regular movement has heretofore taken place and where the shippers arranged with the railways to continue rates on the same or a slightly higher basis than that previously applicable.

On re-consigned traffic, which consists of cars re-consigned from one siding to another within the switching or yard limits of one station, after having been received over the same line and placed once for delivery, the charge made is 1¢ per 100 lbs., minimum \$5.00 per car, at outside points; and specific charges on a slightly higher basis are provided for Montreal, Ottawa and Toronto terminals.

The new rates become effective November 1st and any shippers or receivers interested in local switching movements would be wise to secure copies and to make certain that their requirements are provided for.

#### Joint Railway Rates.

As announced a couple of months ago, the Board of Railway Commissioners for Canada issued on August 1st their order No. 28618, directing that joint class rates be established between points on the Canadian Pacific and Grand Trunk Railways; Canadian Pacific and Canadian National Railways, and the Grand Trunk and Canadian National Railways, respectively, between certain territory east of Fort William, which rates were to be on practically the same basis as is applicable for a one line haul with additional arbitraries ranging from 2¢ first class to 2½¢ tenth class, to cover the cost of the transfer from one line to another and the movement over two lines.

Under the terms of the order these rates were to have been made effective by the railways not later than October 1st. None of the three roads in question, however, have complied with the order and application has been made by them to the board for re-opening of the whole question, contending that the rates ordered are unduly low.

It is problematical what action the board will take.

#### FOREST FIRE LOSSES IN NEW BRUNSWICK.

Fire prevention day was signalized by the issuing of statistics last Thursday by Provincial Forester G. P. Prince, showing the damage done by forest fires in New Brunswick, and special exercises were carried on in the public schools with a view to bringing forward the necessity for taking every possible step to prevent fires.

The statistics which were sent out by the Forest Service showed that there had been 342 forest fires in New Brunswick this season, which burned over 11,326 acres, or about 18 square miles, being a total damage of \$154,155.

## Duties of a Machine Tender

By Paul Smith in "The Paper Industry."

It is understood that in the development of paper from raw materials, the machine tender plays a very important part, controlling as he does the formation of the sheet. A description of his responsibilities and duties will necessarily be of interest to all engaged in the manufacture of paper.

In the matter of responsibility the machine tender should be held absolutely accountable for the merits and shortcomings of the machine personnel, the quality of the paper and the production tonnage for his tour of duty. Full responsibility should be his for since the remainder of the machine crew are under his guidance and instruction, their deficiencies only prove that his duties have not been properly performed, the most important of which is the training of an efficient crew.

### The Machine Hands

The duties of a machine tender, while seemingly numerous and varied, are very simple if he has or can acquire the knack of teaching his crew the duties expected of them, training them in these duties so that they may do their own work at the right time in the proper manner, without any bustle and flurry. This will relieve him from the actual manual operations, except in case of emergency, allowing him to concentrate his mind and energies on the inspection of the machine parts and his personnel, looking to their improvement wherever possible.

Aside from the directing of his crew, the inspection of his machine parts is the only requisite necessary for his success as a first-class machine tender. This inspection should include the following:

#### Screens and Wire

Inspecting the condition and adjustment of the screens, so that they may screen the stock clean, and allow the necessary amount of water in the stock to form a uniformly closed sheet; the leveling of the slices to get uniformity in weight across the whole machine width; adjusting the wire shake so as to help produce the desired tearing strength and assist in closing the sheet.

He should always see to it that the dandy roll is kept clean and that it is set level on the sheet, and at a pressure that will assist in acquiring the desired formation; that the suction boxes have the suction required to remove enough water from the sheet without deleterious effect on his wires.

#### Wet Felts

The wet felts should be washed often enough to insure against markings from a dirty felt, which would mar any otherwise perfect sheet. The presses should be set down with enough leverage to press out the water so as to assist in the drying of the sheet evenly across the machine width and the smoothing press adjusted with enough leverage to remove as much as possible the wire and felt marks in the sheet.

#### Dryer Felts

He should always keep well-informed as to the condition of his dryer felts having them replaced whenever it is deemed necessary. The replacement of a felt should always be under his direct personal supervision, as it is of great importance that the seam in the dryer felt should be correctly sewed. In case the seam is not sewed properly (as, for instance, when the thread

is pulled too tight) it will make a pucker in the seam, causing the felt to wrinkle and perhaps ruin the felt, or at least cause a loss of time with attending inconveniences, while a new seam is being made.

#### Calenders, Winders, Etc.

In order to deliver the required grade of paper with uniformity of finish and desired reel perfection, it becomes necessary for the machine tender to inspect the operations subsequent to the sheet entering the calender stack with as much, if not more, care than he exercised before it left the dryers, seeing to it personally that the amount of leverage required to give the desired finish is always on the stacks; that the back tender calenders a good even reel, and that the doctors are kept clean; that the winderman makes a perfect splice and tears out all slime holes and calender cuts, splicing the sheet with a neat perfect splice in each case.

#### The Finished Product

The machine tender should always inspect the finished product from the winder to assure the winding of good even rolls, and oversee the weighing of all his products so that he will always know exactly the machine's production during his tour of duty.

### CO-OPERATION FOR CHARACTER AND CITIZENSHIP.

The ground idea of the Conference on Education in relation to the quality of our citizenship, which is planned for Winnipeg, October 20th to 22nd this autumn, is that the work of the schools should be featured as the primary concern of the people.

The teacher to-day in Canada has little to remind him—how hard it is not to say 'her'—that he is working under the eye of the nation and for the nation's good. Let us correct that. Let us focus public attention on education, and all this will change—not overnight, but the process must be started some time. Why not now? That the full fruition of this will not come in a day is no reason for being blasé about it, and trusting to chance to bring it about. When Germany's leaders set themselves to Prussianize German education, and to drill into the mentality of the whole people that the state is supreme and that each individual must regard himself as a cog in a vast machine, they did not trust to chance. They forged a system and the result was seen when the whole nation responded to the call of its masters and plunged the world into blood and desolation. Why not say: What Germany did in a bad way and for bad ends may be at least measurably done in a good way for the good end of evolving a citizenship whose goal shall be altruism, not selfishness, co-operation, not arrogance and aggrandizement? This is the spiritual goal that can be made the operative principle of Canadian citizenship through the medium of the schools. Let this be declared in a national gathering of citizens to be one of the grand functions of the schools, operating under provincial organization and control, but informed by the consciousness of a national purpose.

If this at all conforms to your idea of the way the Canadian people can be brought to take an appropriate view of the importance of education, and of the way by which the teaching profession can be brought to function properly in the interests of the people, make your plans so as to be present at the Winnipeg Conference, October 20th to 22nd.—From a Bulletin of the National Educational Conference.

## Howard Smith Buys Toronto Paper Co.

The announcement was made this week that the Howard Smith Paper Mills had purchased control of the Toronto concern at a price of \$138 per share of Toronto Paper stock, which, incidentally, has advanced yesterday to 130 from 110 per share on the Toronto exchange.

R. S. Waldie, president of the Toronto Paper Manufacturing Co. said that the directors had decided to accept the offer and the shareholders have the same privilege. Thirty days have been granted to complete the transaction, and notices will shortly go to shareholders. It is not thought that a meeting of shareholders will be necessary as directors hold majority control, and are only called upon to deliver 51 per cent of the outstanding stock to the Howard Smith interests. It is understood that the price agreed upon for the stock includes an unpaid dividend of 5 per cent.

In his statement President Waldie of Toronto Paper said that neither himself nor others of the directors were essentially paper men and that they had other large interests commanding their attention. He went into Toronto Paper originally in the interest of the shareholders, always in the hope that the company would be turned over to regular paper men without shareholders' interests being impaired.

Toronto Paper was organized some years ago by the late John Barber, M.P.P., and after his death it was conducted by Garnet P. Grant of the Dominion Bond Company. Upon the failure of that institution, Mr.

The last annual statement of the company showed earnings of \$162,373, against \$198,039 in 1918. Current assets were \$490,245, and current liabilities \$130,706, leaving a net working capital of \$359,539.

Total authorized capital of the company is \$1,000,-



R. S. WALDIE, PRESIDENT, TORONTO PAPER MANUFACTURING CO.



C. HOWARD SMITH, PRESIDENT, HOWARD SMITH PAPER MILLS, LTD.

000, of which the total paid up and outstanding is \$750,000. There is a bond issue of \$500,000, of which \$38,900 had been redeemed.

For the quarter ended June 30, 1913, the dividend of the company was increased from 5 to 8 per cent per annum, but in the quarter ended December 31, 1913, it was again reduced to 6 per cent. The dividend was passed altogether from the quarter ended June 30, 1914. For the six months ended June 30, 1916, 2 per cent was paid, and 3 per cent for the six months ended December 31, 1916. In the next two half yearly periods 3 plus 2 per cent was paid, and 3 plus 1 per cent for the six months ended December 31, 1918.

Toronto Paper directors are : R. S. Waldie, Toronto, president; W. J. Sheppard, vice-president, Waubashene, Ont.; Rev. Dr. William Briggs, Toronto; T. Albert Brown, Toronto; A. W. Briggs, Toronto; R. A. Lyon, Toronto; T. H. Watson, Toronto.

### WILLIAM WHYTE RETURNS.

Mr. Wm. Whyte who is in charge of the Pulp and Paper Equipment Department of the Canadian Fairbanks-Morse Company has just returned from an extensive trip in England. He reports a very successful business experience and states that he has succeeded in making scales of considerable volume to a number of the largest paper mills in England. At present he is working about 26 hours a day catching up with the affairs of his department but expects that by next week he will again be calling on his Canadian customers.

Waldie and his associates took it over. The company has a paper mill at Cornwall, the main product being a medium grade writing paper and high grade book papers. The Howard Smith Company also specializes in writing paper.

The Noble & Wood Machine Co., Hoosiek Falls, New York, announces that Mr. James H. Haines, until recently connected with the Glens Falls Machine works, has become associated with this company in the capacity of sales engineer.

# Pulping Quality of American Woods

By Otto Kress, Sidney D. Wells, and Vance P. Edwards.

Forest Products Laboratory, Madison, Wis.

**REDWOOD**—*Sequoia sempervirens*. Wt. 23 lb. Fiber 5.5 m.m.

*Range*—From the southern borders of Oregon (on Chetco River (about six miles from mouth, and on Winchuck River), and southward in the coast region (twenty to thirty miles inland) through California to Salmon Creek Canyon, twelve miles south of Punta Gorda, Monterey County; Redwood.

*Common Names*—Sequoia (Cal.); Coast Redwood (Cal.); Redwood (Cal. and Am. lit.); California Redwood (Eng. lit.)

## Sulphite Pulp

Yield 920 lb. Difficult to bleach.  
Easily pulped—fair strength—dark colored.

*Possible Uses*—Low grade wrappings.

## Sulphate Pulp

Yield 950 lb.  
Character—Long fibered but tender.

*Possible Uses*—As a substitute for spruce.

**WHITE ASH**—*Fraxinus americana*. Wt. 34 lb. Fiber 1.2 m.m.

*Range*—From Nova Scotia and Newfoundland to Florida and westward to Ontario and northern Minnesota, eastern Nebraska, Kansas, Oklahoma, and Texas (Trinity River).

*Common Names*—White Ash (Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Va., W. Va., N. C., S. C., Ga., Fla., Ala., Miss., La., Tex., Ky., Mo., Ill., Ind., Iowa, Kansas, Nebr., Mich., Ohio, Ont., Minn., N. Dak., Wis.); Ash (Ark., Iowa, Wis., Ill., Mo., Minn.); American Ash (Iowa); Franc-Frene (Quebec); Cane Ash (Ala., Miss., La.)

## Sulphite Pulp

Yield 1,530 lb. A little hard to bleach.  
Easily pulped. Very weak. Poor color.

*Possible Uses*—Few.

## Soda Pulp

Yield 1,350 lb.  
Character—Very difficult to reduce and bleach.

*Possible Uses*—Few.

**ASPEN**—*Populus tremuloides*. Wt. 23 lb. Fiber 1.0 m.m.

*Range*—Southern Labrador to Hudson Bay (southern shores) and northwestward to the MacKenzie River (near mouth and Alaska (Yukon River); southward to Pa. (mountains), northeastern Missouri, southern Nebraska, and throughout the western mountains to northern New Mexico and Arizona and central California; Lower California (San Pedro Matir Mountains) and Mexico (mountains to Chichuahua).

*Common Names*—Aspen (N.H., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Ill., Ind., Wis., Mich., Minn., N. Dak., Nebr., Ohio, Ont., Oreg., Utah, Idaho, Nev., Mont., Colo., Cal.); Quaking Asp (N.Y., Pa., Del., Cal., N. Mex., Idaho, Colo., Ariz., Ill., Iowa, Minn., Mont., Nebr., Utah, Oreg., Nev.); Mountain Asp (Mont.); Am. Aspen (Vt.); Aspen Leaf (Pa.); White Poplar (Mass.); Trembling Poplar (Minn., Col.); American Poplar (Minn., Colo.); Poplar (Vt., N.Y., Ill., Ind., Minn., Mont.); Popple (Wis.,

Iowa, Mont.); Tremble (Quebec); Trembling Aspen (Iowa); Aspen Poplar (Cal., Mont.).

## Sulphite Pulp

Yield 1,030 lb. Easily bleached.  
Easily pulped—very weak—excellent color.

*Possible Uses*—Used with longer fibered stock for better grade of papers.

## Soda Pulp

Yield 1,080 lb.  
Character—Soft and short fibered—easily bleached.

*Possible Uses*—When bleached and mixed with longer fibered bleached stock is well adapted for book, envelope, and high grade printings.

## Mechanical Pulp

Yield 2,170 lb.  
Character—Short fibered, poor strength, good color but may have black specks present.

*Possible Uses*—As a filler when used with longer fibered stocks.

**COTTONWOOD**—*Populus deltoides*. Wt. 23 lb. Fiber 1.3 m.m.

*Range*—From Quebec (Lower Maurice River) and Vermont (Lake Champlain) through western New England and New York, Pa. (west of Alleghenies), Maryland, and Atlantic States to western Florida and west to the Rocky Mountains from southern Alberta to northern New Mexico.

*Common Names*—Cottonwood (N.H., Vt., Mass., R. I., N.Y., N.J., W. Va., N.C., Ala., Fla., Miss., La., Tex., Cal., Ky., Mo., Ill., Wis., Kans. Nebr., Iowa, Minn., Mich., Ohio, Ont., Colo., Mont., N. Dak., S. Dak.); Big Cottonwood (Miss., Neb.); Yellow Cottonwood (Ark., Iowa, Neb.); Cotton-tree (N.Y.); Carolina Poplar (Pa., Miss., La., N. Mex., Ind., Ohio); Necklace Poplar (Texas, Colo.); Vermont Poplar (Vt.); Whitewood (Iowa); Broad-leaved Cottonwood (Colo.).

## Sulphite Pulp

Yield 1,030 lb. Easily bleached.  
Easily pulped—very weak. Excellent color.

*Possible Uses*—Same as aspen.

## Soda Pulp

Yield 1,030 lb.  
Character—Soft and easily bleached.

*Possible Uses*—Same as aspen.

## Mechanical Pulp

Yield 2,180 lb.  
Character—Short fibered, weak, good color.  
*Possible Uses*—As a filler when used with longer fibered stocks.

**BASSWOOD**—*Tilia americana*. Wt. 21 lb. Fibre 1.1 m.m.

*Range*—New Brunswick to Virginia and (along Alleghany Mountains) to Georgia and Alabama (mountains); west (in Canada) to Lake Superior (eastern shores) and to Lake Winnipeg (southern shores) and Assiniboine River (in United States), to eastern Dakota, eastern Neb., Kansas, Oklahoma, and eastern Texas.

*Common Names*—Basswood (Me., N.H., Vt., R.I., Mass., Conn., N.Y., N.J., Del., Pa., W. Va., D.C., N.C., S.C., Ga., Ala., Miss., La., Ark., Ky., Ill., Ind.,

Iowa, Wis., Mich., Ohio, Ont., Neb., Kans., Minn., N. Dak.; American Linden (Me., N.H., R.I., N.Y., Pa., Del., N.C., Miss., Ohio, Ill., Neb., N. Dak., Ont., Minn.); Linn. Pa., Va., W. Va., Ala., La., Ill., Ind., Ohio, Mo., Iowa, Kans., Nebr., Wis., S. Dak.); Linden (Vt., R.I., Pa., W. Va., Neb., Minn.); Limetree (R.I., N.C., S.C., Ala., Miss., La., Ill.); Whitewood (Vt., W. Va., Ark., Minn., Ont.); Bee-tree (Vt., W. Va., Wis.); Black Limetree (Tenn.); Smooth-leaved Limetree (Tenn.); White Lind (W. Va.); Wickup (Mass.); Yellow Basswood (Ind.); Lein (Ind.)

#### Soda Pulp

Yield 1,020 lb.

Character—Soft and easy bleaching.

Possible Uses—Similar to aspen.

PAPER BIRCH—*Betula papyrifera*. Wt. 34 lb. Fibre 1.2 m.m.

Range—From Labrador to Hudson Bay (southern Shores), Great Bear Lake, Yukon River and coast of Alaska; southward to New York (Long Island) and northern Pa., central Michigan, and Minnesota, northern Nebraska (Bluffs of Niobrara River), Dakota (Black Hills), northern Montana, and northwestern Washington (near Seattle).

Common Names—Paper Birch (N.H., Vt., Mass., R.I., Conn., N.Y., Wis., Mich., Minn., Ont.); Canoe Birch (Me., Vt., N.H., R. I., Mass., N.Y., Pa., Wis., Minn., Ont.); White Birch (Me., N.H., Vt., R.I., N.Y., N.J., Wis., Minn., Mich., Nebr., Ont.); Silver Birch (Minn., N.Y.); Large White Birch (Vt.); Boleau (Quebec).

#### Sulphite Pulp

Yield 1,000 lb. Difficult to bleach.

Easily pulped—poor strength and color.

Possible Uses—Few.

#### Soda Pulp

Yield 1,350 lb.

Character—More difficult to reduce than aspen—soft, easily bleached.

Possible Uses—Similar to aspen.

#### Mechanical Pulp

Yield 3,000 lb.

Character—Pinkish color—short fibre and poor strength.

Possible Uses—As a filler with long fibered stocks.

YELLOW BIRCH—*Betula lutea*. Wt. 34 lb. Fibre 1.5 m.m.

Range—From Newfoundland and along the northern shores of St. Lawrence Gulf to Abitibi Lake and Rainy River; southward to northern Minnesota and through the Northern States to eastern Tennessee, North Carolina, and Delaware.

Common Names—Yellow Birch (Me., N.H., Vt., Mass., Conn., R.I., N.Y., N.J., Pa., N.C., S.C., Ill., Mich., Wis., Minn., N. Dak., Ont.); Gray Birch (Vt., R.I., Pa., Mich., Minn.); Swamp Birch (Minn.); Silver Birch (N.H.); Merisier (Quebec); Merisier Rouge (Quebec).

#### Sulphite Pulp

Yield 1,590 lb. Easily bleached.

Easily pulped—very weak—good color.

Possible Uses—Same as aspen.

#### Soda Pulp—

Yield 1,360 lb.

Character—More difficult to reduce than aspen—soft, easily bleached.

Possible Uses—Same as aspen.

CHESTNUT—*Castanea dentata*—Wt. 25 lb. Fibre 1.0 m.m.

Range—From southern Maine to northwestern Vermont (Winooski River), southern Ontario and southern shores of Lake Ontario to southeastern Michigan; southward to Delaware and southeastern Indiana, and on the Allegheny Mountains to central Kentucky and Tennessee, central Alabama, and Mississippi.

Common Names—Chestnut (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W. Va., N.C., Ga., Ala., Miss., Ky., Mo., Mich., Ont.); O-heh-yah-taf"—"Prickly Bur" (Indians, N.Y.).

#### Soda Pulp

Yield (on extracted chips) 950 lb.

Character—Soft, easy bleaching, and a little hard to cook.

Possible Uses—Similar to aspen. Unextracted wood can be pulped but is very difficult to reduce and bleach.

CUCUMBER-TREE—*Magnolia acuminata*. Wt. 27 lb. Fibre 1.3 m.m.

Range—From western New York through southern Ontario to southern Illinois and south in the Appalachian Mountains to southern Alabama (Stoeton) and northeastern Mississippi (Meridian); central Kentucky and Tennessee (near Nashville and eastern part of State); northeastern, southern, and southwestern Arkansas.

Common Names—Cucumber-tree (R.I., Mass., N.Y., Pa., D.C. (cult.), N.C., S.C., Ala., Miss., La., Ark., Ky., W. Va., Ohio, Ind., Ill.); Mountain Magnolia (Miss., Ky.); Cucumber (W. Va.); Black Lin (W. Va.); Magnolia (Ark.); Pointed-leaved Magnolia (lit.).

#### Soda Pulp

Yield 1,200 lb.

Character—A little harder to reduce and bleach than aspen.

Possible Uses—Same as aspen.

BLACK GUM—*Nyssa sylvatica*. Wt. 30 lb. Fibre 1.7 m.m.

Range—From Maine (Kennebec River) to Florida (Kissimmee River and Tampa Bay) and west to southern Ontario, southern Michigan (up to Gratiot County), southeastern Missouri, and Texas (Brazos River).

Common Names—Black Gum (N.J., Pa., Del., Va., W. Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ill., Ind.); Sour Gum (Vt., Mass., R.I., N.Y., N.J., Pa., Del., Va., W. Va., S.C., Fla., Tex., Ohio, Ind., Ill.); Tupelo (Mass., R.I., N.J., Del., S.C., Ala., Fla., Miss., Tex., Ill., Ohio); Pepperidge (Vt., Mass., R.I., N.Y., N.J., S.C., Tenn., Mich., Ont.); Wild Peartree (Tenn.); Yellow Gumtree (Tenn.); Gum (Md.); Stinkwood (W. Va.); Tupelo Gum (Fla.).

#### Soda Pulp

Yield 1,300 lb.

Character—Soft; a little harder to cook and bleach than aspen.

Possible Uses—Similar to aspen.

#### Mechanical Pulp

Yield 2,610 lb.

Character—Very short, but tough fibre, very white color.

Possible Uses—As a filler with longer fibered stocks.

(To be Concluded Next Week.)



## Hydroplane Forest Fire Patrol

The Laurentide "Digester" gives the following interesting account on the progress of hydroplane forest patrol:

The aerial service inaugurated by the St. Maurice Forest Protective Association in co-operation with the Department of Lands and Forests of Quebec and the Dominion Department of Naval Affairs has now been carried far enough to give some indication of its probable value. Owing to difficulties in making an agreement between the Government and the association, it was the middle of June before the seaplanes were released at Halifax and by the time they were overhauled and ready to fly July was at hand. The two successful flights made by Lt. Graham from Halifax, demonstrated their value for long distance work and reliability. Immediately on arrival at the base on Lac a la Tortue, near Grand Mere, flying commenced and trips were made to all parts of the St. Maurice Valley. Some fires were seen and their location and size accurately determined by flying over them. It was found feasible to transport a Johnson fire pump and hose to any crew needing it. A fire anywhere in the 16,000 square miles could be reported inside of two hours and in another two hours a pump could be on the lake nearest the fire. The moral effect of having a plane suddenly appear over a fire just started and the possibility of detecting the person who set it will certainly be of value as a deterrent.

For transporting persons who have business at different points in the woods the planes are invaluable. The manager of the Association could be taken within two hours or two and half at the most to any part of his district. The Superintendent of Logging Operations could go to any part of his operations, have time for inspection and return the same day. Men who were injured in camp or taken ill could be brought out, in the utmost comfort, and taken to a hospital. Unfortunately the men who can benefit by the use of the planes have not taken advantage of them, although it is hoped they will do so before the season is over.

### For Exploration Work.

For exploration work they are invaluable. Five hundred square miles were covered and notes made of the location of burns, lakes, timber, etc., and some photos taken in two hours and the writer came back with a far better idea of the country than if he had travelled over it for two months. Types of timber are easily distinguished. Areas of burn can be located, one can tell whether the burns are beginning to re-stock or not. Anyone wanting to buy a piece of timber land could tell in an afternoon's flying whether it would be worth purchase or not. The manager or any other official of a timber holding concern could, in a few days flying learn more about the location and value of his timber than he could get in volumes of reports.

From Grand Mere to La Tuque takes about an hour, from Grand Mere to Lake St. John took two hours, giving a speed of between sixty and seventy miles per hour. Four hours flying can be managed comfortably.

Mr. Chahoon made a flight a few days ago and expressed himself as well pleased with the machine as a means of getting rapidly from place to place and for getting a good idea of wooded country. Mr. E. M. McLaren made a trip over the country north of Lake St. John and said that he could see all the details of

the forest but that he saw too much to remember for a first trip.

### What a Flight is Like.

It may be interesting to describe what a flight is like to a novice. As one taxis across the lake in starting one has the sensation of speed and hears the slap, slap of the waves on the hull. As the machine gains speed this stops and you seem to skim the surface of the water and then suddenly, almost with a bound you leave the water and objects on the ground grow rapidly smaller. As you circle to gain height the ground looks like a wonderful relief camp in brilliant colors, the houses and churches look like toys and horizon widens wonderfully. From Grand Mere at a height of 2,000 feet Montreal Mountain is plainly visible and the St. Lawrence with the towns on its banks is very distinct. The air grows colder and the rush of wind against one's face is like travelling in an automobile at a high rate of speed. The machines are remarkably steady with an occasional gentle sway to one side or the other. Sometimes the machine seems to drop suddenly with the feeling which one has when an elevator goes down too fast. You can move, look at your maps, the compass, the barometer, make notes, read, or even sleep if you like.

In flying over forested land the different kinds of trees are quite distinct, especially as the leaves turn. Lakes are very dark in color, almost black, and shoals and rocks can be plainly seen. Sandbars under water in the rivers are yellowish and plainly visible. There is not much sensation of speed unless you watch some point directly below you or which you are approaching. All the details of the terrain are plainly visible. Burnt areas show plainly, pure stands of spruce and balsam show up so that the individual trees can be counted. Logs lying on the banks and in the water can be seen plainly and counted. Photographs at 2,000 feet show the logs plainly and the number in a boom can be readily estimated by counting the number to a square inch and then taking the area of the boom. Fires can be seen a long distance. Flying the other day we saw one from about ten miles and flew to it and over it when we saw some jobbers who were building a camp cooking their supper in the open. In the rivers rapids can be plainly distinguished and also shoal water.

When you are over the lake on which you expect to land it looks so small that you do not see how the plane can possibly get into it and as you go down you keep wondering how the pilot will ever know when to drop on the water. It seems to approach so rapidly and you have no sense of its actual distance away. One moment you are a thousand feet up in the air and the next you strike the water, strike is not the word for you barely seem to touch it. The plane rises in the air again for a second and then drops down without a jar and all of a sudden you seem to be shooting along at terrific speed, for suddenly you have something to compare with and give you the sensation. As a matter of fact your speed diminishes about half when you strike the water but you seem to have doubled it instead. You taxi down the lake to the landing place, glad enough to be on terra firma again.

Warm beds and open windows make the eyes clear in the mornings.

One sleepless night exhausts the body more than ten days of hard work.

### ESTHONIA MAY SELL PULP IN U.S.

That Canadian paper and pulp concerns may soon face competition from an unexpected quarter was indicated in an interview given out in New York recently by the New York agent of the Esthonian Government, Bruno Schill.

According to Schill that country can help to solve the wood pulp problem in the United States by shipping 20,000 tons that are now ready at Reval, the capital of the republic, to any American port.

Mr. Schill who is also president of the Russian and Baltic Co., said that the great need of the 2,000,000 inhabitants of the only stable government in Russia was credit here, in order to buy vast supplies in exchange for the wood pulp and other products that are there so plentiful. He has orders from the Esthonian Government for many thousands of tons of supplies and wishes to pay for them with Esthonian treasury bills, payable at the exchange rate of from six to nine months. In order to accomplish this credit it is necessary and to that end he is now working.

"There are now sixty-three paper mills in the republic," said Mr. Schill. "and before the war these produced 38,000,000 rubles worth of pulp and paper in a year. The forests are almost limitless and the production can readily be increased to a point where not less than 500,000 tons per year can be produced.

"This pulp can be sold here at not more than the present market price of pulp coming from Canada and elsewhere. There is now ready for export from Reval many thousands of tons of pulp, and it is this that we purpose using to establish a financial credit with the United States. In addition to the mills already in operation, many more will be erected, and I have large concessions of forest lands available for the continued and ever-increasing production of pulp. Just as soon as the proper credit facilities can be established shipments will begin that will surely relieve the situation."

### No Danger to Canada Market.

Speaking with respect to the item in which Esthonia was represented as a coming competitor of Canadian pulp mills, a Canadian pulp and paper man said:

"You may judge of the extent of the menace from Esthonia when I tell you that the entire 20,000 tons which were represented as being ready at Reval for shipment to the United States is but one-third the annual output of a single Canadian mill which I might mention. The 20,000 tons would only comfortably fill the shortage which exists at the present time. I doubt if there is more than 20,000 tons actually unsold in the whole of this country, so that you can see what a mere drop in the bucket this amount of pulp would be.

"Again, I have just received a cable from Sweden saying that it is doubtful if Germany can re-enter the export market for two years to come—this owing to various conditions of shortage of raw material, sulphur, etc., and to lack of money—so that I would be disposed to ask whether Esthonia has much better chances of getting into the export trade than Germany. Also, it is one thing to have pulp in a port in Russia and another thing to get it across to the United States. In two months from now the Baltic ports will be closed for the winter.

"So far from the movement being from Europe to here, the movement is from here to Europe. I may say that groundwood is getting exceedingly scarce. I understand that Great Britain and France are taking about 35,000 to 40,000 tons this year from Canada and that the largest producer of this material in Canada

will be cleaned out of every pound by the end of the season.

### BEAVER BOARD COMBINE.

#### Canadian and American Projects Plan to Unite.

New York.—All companies manufacturing and selling Beaver Board, a wall board that has been manufactured since 1906, have been consolidated into Beaver Board Companies. These companies have manufacturing plants here and in Canada and maintain sales organizations at home and abroad.

### SCANDINAVIAN PULP.

Mr. Alexander E. Kolm, of M. Gottesman and Co., New York, who has been spending several months in Scandinavia, states that "Swedish pulp manufacturers do not want the American paper mills to form the same mistaken idea which England had, that the increased prices for pulp being asked over the normal price indicated profiteering on their part. The fact is that costs of production in Sweden and Norway, particularly the latter, are very high, and the quotations are in proportion to the cost. The Swedes are to a large extent apprehensive of the effect which the increased production of Canadian pulp will have on their ability to sell in the American market. It is realized that not only has the Canadian output increased in volume, but also the quality has been improved, and that both of these items will enhance as time goes on. The phenomenal growth and development of the Canadian pulp industry is a source of wonderment to them, and they have a wholesome respect and admiration for the pulp manufacturers of America's northern neighbor. The Swedes, although believing their pulp to be of superior quality, have nevertheless, in many instances, improved the quality of their output. In the American market, as in the English, the Scandinavians are willing to meet legitimate competition as long as there is a true appreciation of conditions in their country, and no unfair tactics resorted to. The fact is, there seems to be a general desire on the part of the foreign mills to eliminate any causes of misunderstandings."

### CONDITION OF PAPER TRADE IN BELGIUM.

#### Belgian Manufacturers Asking for Heavier Duties Fearing Heavy Importations.

Godfrey Langlois, Agent General of the Province of Quebec in Brussels, writes regarding the present condition of the paper industry in Belgium as follows:

"About 40 per cent of the machines are in operation, and the Belgian authorities are at work to locate in Germany the machinery stolen during the occupation. The actual production averages about 20 per cent of the producing force of the working machines. Belgian paper manufacturers do not expect to reach the whole pre-war production before three years. Raw material—that is to say, pulp and pulpwood—are bought easily enough on the Scandinavian market, but they cost three times more than in 1914. These high prices and the change hit very hard the Belgian paper manufacturers.

"Mr. Picard, the president of the Paper Syndicate, says that they are asking the Government to establish the license system for importation of foreign paper, because the Belgian market will be loaded with Dutch English and American paper and that these importations will hurt the Belgian industry. They ask also for heavier duties."



## Technical Section



### NEW MEMBERS

One of the first letters received from the Secretary since his return is the announcement of the following new members to the Technical Section: F. H. Andrews Dryden, Ont. and J. E. T. Musgrave, Toronto.

The former is a junior member and the latter a student member. They are very welcome.

### REVIEW OF LITERATURE.

**A-1. Chemical Constitution of fir wood lignin.** P. Klason, Ark. Kemi. Min., O. Geol., 1917, 6, 21 pp. Chem. Zentr., 1919, 90, I, 92-93. J. Soc. Chem. Ind., 38, No. 15, 570 (1919). The author favors the hypothesis that the lignin of fir wood consists of condensed forms of more or less methylated cinnamic alcohols and allied aldehydes and acids, and the general type of substituents shows a relationship to protocatechic acid, to which resins and tannins are also allied. It is not improbable that lignin may be present in the wood in the form of a glucoside, and it may be built up from the pentoses.—J.S.

**A-1. Determination of the degree of lignification of Vegetable fibres.** P. Waentig and W. Gierisch. Z. Angew. Chem. 32, 173-175 (1919). J. Soc. Chem. Ind. 38, No. 15, 530 (1919). By measuring the action of chlorine under specified conditions upon fibres containing lignin it appears to be possible to determine the degree of lignification. This method is compared with the hydrolytic process for various cellulosic materials. From a comparison of the chlorine values of lignified fibres with those of the isolated lignins it appears probable that the "lignin" is relatively unchanged in the hydrolytic process. The specific action of chlorine makes it a more suitable reagent than alkalis or acids for the oxidation or decomposition of fibres.—J.S.

**B-3. Airship service in forest areas.** Captain John Barron, R.A.F. Can. For. J., June, 1919, p. 249.—C.L.

**B-4. Making forestry pay its way.** Can. For. J., July, 1919, p. 314. Describes how a stove mill in Pennsylvania erected to consume useless hardwoods turned in a profit of 42 per cent on the investment.—C.L.

**B-6. Can timber limits be mapped by airplane?** Ralph Thelen, Can. For. J., July, 1919, p. 312. Forecasts the preparation of forest maps as well as maps for military purposes by photography from airplanes.—C.L.

**B-7. Technical men wanted in the woods.** Can. For. J., July, 1909, p. 302. Extract from "The Timberman," advocating the wider employment of forest school graduates in woods' work.—C.L.

**B-9. Ontario's forest resources.** James White, Can. For. J., July, 1919, p. 310. Reference to the investigation of the forest resources of Ontario, by the Commission of Conservation. Reference also to the report on the forests of British Columbia, already published, and the report on the forests of Saskatchewan in process of completion.—C.L.

**B-9. Public necessity and private rights.** Can. For. J., July, 1919, p. 301. Discusses the program for a national forestry policy in the United States, advocated by Chief Forester Graves. Extracts from comments of

R. S. Kellogg, Secretary, Newsprint Service Bureau, relative to proposals for enforced practice of forestry on privately-owned lands.—C.L.

**B-9. Forestry on Dominion lands.** Can. For. J., July, 1919, p. 324. Advocates placing the handling of the timber business on timber limits on Dominion Crown lands, in the western provinces, under the Dominion Forestry Branch. Refers to similar action already taken by the provinces of British Columbia, Quebec and New Brunswick. The Commission of Conservation has also advocated this policy for some years.—C.L.

**B-9. A question for New Brunswick.** Angus McLean, Can. For. J., July, 1919, p. 308. This article argues for still greater efficiency in forest fire protection including the regulation of slash burning on settlers' lands; the establishment of more pulp and paper industries to utilize minimum values from the forest; the avoidance of waste, both in the woods and in the saw mills; also, reforestation on lands which are not in a condition to reproduce naturally.—C.L.

### NEW PATENTS.

**D-2, E-2. Wood cellulose and mechanical pulp: Process for separating the rosin from.** H. Wandrowsky. Ger. Pat. 309,630, 5.5.18. J. S.

**E-2, F-2, K-2. Rosins, fats and oils from cellulose, wood pulp and paper pulp; Process of extracting.** O. Brune. Ger. Pat. 310,554, 22.5.17. J. S.

**E-5. Cellulose: Digesters for use in the manufacture of, and like operation.** E. Schaufelberger. Eng. Pat. 124,676, 27.9.18 (Appl. 15,772/18). J. S.

**E-5. Cellulose Digesters: Apparatus for charging.** A. Steenpffl. Ger. Pat. 309,679, 15.3.18. J. S.

**K-10: Manufacturing of hard sized paper.** Ger. Pat. 309,999, 8.12.17. J. S.

**K-12. Paper, paper board and like material, apparatus for drying in course of manufacture.** Thames Paper Co., Ltd., and J. B. J. Privett. Eng. Pat. 122,352, 31.5.18 (Appl. 9026/18). Cellulose or cellulosic materials: Preparations of solutions of, Zellstoff-Fabrik Waldof, and V. Hottenroth. Ger. Pat. 306,818, 3.1.17. J. S.

**K-23 Paper and boards: Process for waterproofing.** H. Wandrowsky. Ger. Pat. 309,565, 21.4.18. J. S.

**K-23. Parchmentized paper, "vulcanized fibre" and the like: Manufacture of.** The Manchester Oxide Co., Ltd. R. H. Clayton, J. Huebner and H. E. Williams. Eng. Pat. 124,979, 27.6.18 (Appl. 10,568/18). J. S.

**K-23. Paper: Manufacture of parchmentized or like.** W. Dangall. Eng. Pat. 123,594, 28.2.18 (Appl. 3598/18). J. S.

**L-5. Cellulose. Method for producing zinc chloride solution of,** W. Ogwa, S. Okubo and I. Murata. Eng. Pat. 122,527, 21.2.18 (appl. 3139/18). J. S.

**L-7. Paper textiles: Process for coating, with nitro-cellulose solutions.** A. Lehner. Ger. Pat. 308,615, 6.11.17. J. S.

**L-7. Paper yarn fabrics: Manufacture of a strong, pliable and water-resistant sheet material from.** E. Pohlmeier. Ger. Pat. 309,516, 24.4.18. J. S.

**L-7. Paper, textiles, etc.: Process for sizing, waterproofing and finishing.** W. Schmidt and E. Heuser. Ger. Pat. 309,680, 4.11.18. J. S.



# UNITED STATES NOTES

President Galliver of the American Writing Paper Company sailed last week for England on the Mauretania. While abroad, he expects to close several important contracts now under negotiation for export. The heavy foreign business which paper manufacturers have done this year is reflected in a volume for seven months ending with July of more than 300 per cent in excess of that in 1918. The value of writing paper and envelopes shipped during that time amounted to \$10,255,252, compared with \$3,058,554 in the corresponding period a year ago and \$1,772,467 in 1917. There is also a heavy demand for the better grades from South American dealers. This situation has resulted in considerable strength recently for American Writing Paper shares. In the New York curb market the common stock, which was quoted in January at 2½¢, sold at 18 in July and is now within two points of the record figure, while the preferred, from an early year level of 27½¢, has sold at 69 this month.

As the result of a conference held at San Francisco last week between Col. H. H. Arnold, Western Department Air Service officer, and Major A. D. Smith, in charge of Oregon forest air patrol, six De Havilland airplanes were despatched from Mather Field to patrol Oregon forests in the effort to prevent devastating fires. The work of the airplane forest patrol has become so necessary, in the estimation of the Department of the Interior and the army, that every effort will be made to secure its extension. This year it is estimated, more than \$10,000,000 worth of standing timber has been saved from destruction by the timely discovery and report of small fires, which were extinguished before they did material damage. But for the aid rendered by the airplanes it is believed that the timber loss from fire would have been enormous. The type of planes to be used in the future is the same as the fighting plane of the great war.

The strike of printers in New York City, which has either delayed or suspended the publication of no fewer than 150 magazines, periodicals and trade papers, has led several publishers to plan moving their plants from New York to other places, and many western cities are bidding vigorously to induce these publishers to consider their particular localities. Three very large publications, according to an announcement made last Friday by the Periodical Publishers Association of America, have already completed plans for permanent removal, and their printing machinery and paper supply are now being shipped to Chicago. The "Dry Goods Economist," which has been published for the past seventy-three years without missing an issue, determined to maintain that record in spite of the printing situation and was printed in mimeograph form. This strike, closing every magazine printing establishment in New York City, is the outgrowth of a quarrel between certain local unions and their international organizations. Some of the local unions have retained their membership in their international union, while the pressmen, feeders and paper handlers have seceded and struck. It is the contention of the international unions that the men should return to work and leave the entire matter to arbitration.

A. E. F. Schard, a trained forester, has been sent by

Sweden to the New York State College of Forestry at Syracuse, N.Y., for a special study in American methods in forestry, on an interchange of students whereby Henry M. Molloney of the New York State College of Forestry goes to Sweden for study there. Both men rank as fellows of the American Scandinavian Foundation, and will get a handsome financial allowance to make possible their securing the best information possible on forestry methods in the countries to which they are sent. Mr. Schard is one of the first students ever sent to the United States for forestry study under the operation of the American Scandinavian Foundation, and the recognition given the New York State College of Forestry is accentuated by the fact that this year marked the first time that the Philippine Government has sent a student to Syracuse for forestry study.

Argument on the appeal of the Attorney-General in the controversy over the price of newsprint paper was heard last week before a Federal Circuit Court of Appeals sitting in New York City. George W. Wickersham, former Attorney-General, appeared for the publishers and Henry A. Wise, former assistant United States Attorney, for the manufacturers. The appeal, taken for the purpose of having the circuit judges review the Federal Trade Commission's rates, was taken by the Attorney-General acting as trustee for the parties in interest. Decision was reserved by the court.

At an expense of more than \$50,000 the Fineh-Pruyn Company, of Glens Falls, will erect a two-story addition to its paper mills to be used as a service building for the company's employees. The building which will be two stories high, will be erected over the wood room of the present mill and will measure 105 by 40 feet. The building will consist of a kitchen, restaurant, smoking and game room, reading room, shower baths, toilet facilities and lockers.

## HALF HOUR SESSION OF NEWSPRINT ENQUIRY.

Pending the completion of the official reports of the Government's auditor, Mr. Geoffrey Clarkson, bringing the mill costs up to date, the resumption of the newsprint inquiry, which was to have gone ahead at Ottawa on September 9th, has been indefinitely postponed until later in the fall months. The length of the adjournment was not stipulated, but it is generally thought that it will be six weeks at least as it was unofficially intimated that it would take the auditor this length of time to go over the remaining mills and compile the late costs.

The hearing at Ottawa last Wednesday lasted less than half an hour. The adjournment had been agreed to the day previously by the chief counsel, Mr. W. H. Tiley, K.C., for the publishers and Mr. George H. Montgomery, K.C., for the manufacturers. Neither of the chief counsel were in attendance at the inquiry. It is possible that the matter of the differential may be dealt with in this interval.

If some pulp and paper mills would invest in Victory Bonds what they have made, because of the exchange on U.S. funds, it would make quite a pile.

# PULP AND PAPER NEWS

Norman E. Wainright, of the Canadian Export Paper Co., Limited, Montreal, was in Toronto during the past week calling upon the trade.

Austin and Nicholson, of Chapleau, Ont., who have in the past taken out large quantities of pulpwood in that section, are not taking out any this season. They are operating about the same number of lumber camps as usual but report that there is a shortage of help and that supplies are from ten to fifteen per cent more costly than a year ago.

E. P. Foley of the Foley-Rieger Pulp and Paper Co., Thorold, Ont., was in Toronto this week and reports that the demand for groundwood pulp is very brisk. His mills are working to capacity. Mr. Foley is president of the Thorold Board of Trade, and states that town is booming at the present time.

S. F. Duncan, secy-treas. of the Provincial Paper Mills Co., Toronto, is on a visit to Port Arthur and intends doing some duck hunting before his return.

The Don Valley Paper Mills, Toronto, are very busy at present and have orders ahead for several weeks. The company recently installed the latest type of Seybold guillotine cutter.

C. N. Ramsay, of Ritchie & Ramsay, coated paper manufacturers, Toronto, who has been spending the past four months in the Old Country for the benefit of his health, has sailed for home and is feeling much improved after his holiday.

James Dale, manager of the periodical department of the Methodist Book Room, Toronto, has returned from an extended trip to the Pacific Coast.

Capt. Claude E. Nicely, late with J. M. Dent and Sons, Toronto, has gone to South Bend, Indiana, where he will remain for some time.

Work has started on a large addition to the buildings of the Georgetown Coated Paper Mills, Georgetown, Ont. The extension will be 64 x 266 feet and part of it will be two stories high and the remainder five stories. The structure will be built of brick, concrete and steel and will be an exact duplication of the present building. The Frid Construction Co., of Toronto, have been given the contract and expect to have the work completed by the first of the new year. The extra space will be used for the finishing and storage departments, and it is understood that new coating machines will be added to the plant, greatly increasing the production. The company have been exceptionally busy for some time and have been working two shifts in order to take care of the business in hand as expeditiously as possible.

An interesting presentation took place at the plant of the Don Valley Paper Mills on Saturday last when Gilbert McNicol was presented by the management and employees with a handsome rocking chair and table on the occasion of his recent marriage. The presentation was made in a neat speech by C. Nelson Gain, sales manager of the company. Mr. McNicol is a son of J. L. McNicol, assistant newsprint controller, of Ottawa, and has been on the staff of the Don Valley mills for a considerable period.

Mr. Nicolson, who is a director of the London, Eng., office of the Canadian Export Association, spent a few days in Toronto last week in connection with the purchase of paper of various lines and interviewed a number of leading paper manufacturers.

Gummed papers, Limited, Brampton, report that they are very busy and have been increasing their production all the time. The prospects are good for future expansion and the Duplex Waterproof of the company has scored quite a success since being placed on the market. A large quantity is being handled by Ellis H. Wilkinson, of Toronto.

Ritchie and Ramsay, coated paper manufacturers, Toronto, last week inaugurated two shifts in their plant in order to overtake the business in hand. It is understood that the firm will shortly add to their equipment in the way of more coating machines.

Lieut.-Col. W. W. Burland, D.S.O., returned to Montreal from overseas recently. He took the 14th Battalion of the Victoria Rifles across the water and had a splendid war record. Just before leaving for home he was commandant of the Bisley team. Col. Burland is well known to the paper trade through his long connection with the Consolidated Lithographing Co. Referring to economic conditions in England, he said that he did not believe that country was producing as much as it might but that this would right itself in the near future.

Mr. Scott of Lyons, Scott & Co., Limited, who are exporters and importers of pulp and paper, with offices in London, Eng., and in New York City, spent a few days in Toronto recently in connection with the paper export department of the firm.

Work on the extensions to the coated paper plant of the Provincial Paper Mills Co., at Georgetown, will be completed by the end of the present month. The additions to the color room are 38 x 80 and 40 x 60, two stories high, and to the finishing room 96 x 80, two stories high. The contractor is W. J. Trimble of Toronto, and the structures are of concrete blocks for the upper portions and concrete and steel for the lower.

Clarke Bros., Ltd., Bear River, N.S., report that good progress is being made in the construction on both their new sulphate pulp plant and their new saw-mill. They are also making readjustments and extensions to their woodworking establishment at Lake Jolly. Clarke Bros. intend operating about the usual number of camps during the coming winter. They find the labor situation is somewhat difficult at the present time and that wages and the cost of camp supplies are all higher than in 1918.

The Davison Lumber & Mfg. Co., Ltd., of Bridgewater, N.S., who were manufacturing specially prepared, dry pressed, baled sulphate and sulphite pulp chips, closed down this department some months ago when ground wood pulp took a slump, and have since not operated owing to being so busy in their lumbering, hardwood flooring, planing mill and box factory department, in all of which they have orders for several months ahead.

A large vessel, the *Thunau*, of London, called at Rimouski and loaded 2,500,000 feet of lumber for Price Bros. & Co.

At the Provincial Employment Bureau during the past two months there has been a strong demand for bushmen. Out of the 101 who scouted jobs during the week ending October 4 in Montreal, 62 signed on as bushmen, while there were 39 other trades, and some common laborers.

The estimated damage by bush fires along the British Columbia coast during the week ending October 4, is \$500,000. About \$200,000 of this is represented in property and the balance in standing timber and logs ready for shipping.

Major M. W. Maxwell, M.C., engineer in timber testing at the Forest Products Laboratories, is leaving at the end of the month to take up special work with the Soldiers Civil Re-establishment Commission. He expects to be connected with Dalhousie.

Capt. E. P. Cameron who has been carrying on work in the Pulp and Paper Division of the Forest Products' Laboratories is back at McGill where he is completing his studies. It is possible that Capt. Cameron will be retained as a member of the staff of the Laboratories.

#### NEW INTERNATIONAL MILL GOING UP.

It has been known for some time that the International Paper Co. would soon begin work on a mill in Canada to make use of the wood from the company's extensive limits on Crown Lands, the wood from which can not be exported to the American mills of the company. In addition to timber limits, certain power rights on the St. Maurice makes Three Rivers the natural location for such a mill.

The first definite information given to the Pulp and Paper Magazine was that a sulphite plant, costing about \$500,000 would be erected this year. This has been started and good progress is being made under the direction of Engineer White. The statement is now made that a large paper mill will be erected probably next year, with an initial output of 200 tons per day. The new mill will employ about 1,500 workmen.

A contract has been entered into with the Shawinigan Company to take from that company, at the outset, in the vicinity of 20,000 h.p. In view of the expansion which is anticipated, it is expected that this contract will be increased later to 30,000 h.p.

It is understood that the rights to waterpowers on the St. Maurice, which were owned by the International, have been disposed of to the Shawinigan Co., under the terms of the agreement.

#### FIRST AID INSTRUCTION.

Among the recent activities of the Service Department of the Eastern Mfg. Co., Bangor, Me., might be noted that of First Aid Instruction to men selected from the various departments, particularly men who work on the night shifts. It is proposed to instruct men in the handling of such accidents as might occur in this mill. The scope of training will embrace first treatment of cuts, burns, fractures, dislocations, electricutions, and drowning.

Besides the regular weekly conferences, the men will during working hours be called upon to dress and treat accidents under the supervision of the Dispensary staff. One of the objects in drilling the men along First Aid Lines is to have on hand at all times, someone

competent to render intelligent treatment, especially during the closed hours of the Dispensary.

Boxes containing supplies necessary in emergency are being conveniently placed in the various departments. Nineteen men are taking this course.

#### TURNER NOW WITH INGERSOLL-RAND.

S. Roy Turner, who was for several years on the engineering staff of the Riordon Pulp and Paper Co., is now in charge of the pulp mill machinery department of Canadian Ingersoll-Rand, Ltd. He and his bride have taken up residence at Sherbrooke, P.Q. Mr. Turner was in military service and, when discharged went with P. P. Westbye of Peterboro. He has an interesting job on his hands in his new position.

#### CONSULT PROVINCIAL MINISTER ON FOREST MATTERS.

Most important matters dealing with the lumber and pulp and paper industries in the province of Quebec were dealt with at a conference of delegates of lumber and paper interests at Quebec on Tuesday. A number of representatives of the Canadian Pulp and Paper Association met with a committee of the Province of Quebec Limit Holders Association to discuss certain changes in the regulations of lands and forests, governing the cutting of timber on Crown lands and the preservation and perpetuation of the forests. It was strongly urged that the provincial government should be approached to impress upon it the necessity of an early revision of those regulations in order to meet present conditions.

It was pointed out by several of the speakers at the conference that the regulations should be changed to prolong the life of the forests of this province and insure a supply for the future. As the end of the stock of merchantable timber which may be cut from so-called virgin forests is in sight, and as it has been shown that a sufficient amount of merchantable timber to make its cutting commercially possible cannot be expected on cut-over lands under fifty years, it is imperatively necessary to devise ways and means to prevent waste, and to cut so that a sufficient crop may be obtained at the earliest possible moment.

It was held that the provincial government should be prepared to give full co-operation to the licensees as well as bear its fair share of the cost. The licensee holder, on the other hand, is in duty bound to support the government in the elimination of every possible waste.

A delegation met the Minister of Lands and Forests on Wednesday and submitted for his consideration a number of proposed laws for the reforestation of the lands held under licenses to cut timber.

#### CANADIAN PAPER MAKERS ISSUE BOOK.

The Canadian Export Paper Company, Ltd. of Montreal, has just issued a very artistically printed little booklet giving details as to resources, activities and production of leading paper makers who are members of the organization. According to the "foreword," "Standardization and centralization, through the lesson learned from the great war, have become fundamental necessities of manufacturing. The great paper industry of Canada, growing greater by leaps and bounds, is taking advantage of these fundamental lessons learned."



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, October 14.—The good business, which has prevailed all along the line in the paper trade, is continuing and newsprint is growing scarcer all the while with the demand incessantly increasing. Never in the history of Ontario, for instance, have the daily newspapers been using so much print paper. This is occasioned by the election campaign, the referendum vote, Victory loan and the large amount of advertising done by these various interests, in addition to an unusually active fall campaign from commercial houses and industrial concerns. The mills are rushed to the limit and are turning down orders every day, some of them at very fancy prices. A forecast of the importance of the print paper industry may be gauged from the fact that, within the next year, at least, seven hundred additional tons will come on the market from Canadian mills and half this quantity of sulphite and mechanical pulp. The latter is in most active requisition and prices are very firm. Some mills report a shortage of groundwood pulp and one organization ran so low last week that it took the sheets from the adjoining pulp plant away just as fast as the product was made.

Toilet and tissue plants are away behind in their orders and there has been a decided development for fruit wraps from the Okanagan Valley in B.C. owing to the bumper crops of apples. One of the most important pieces of news that has come to hand, is that fine samples of twine and felt have been made from the fibre of Saskatchewan flax grown for seed. Experiments have been conducted for some time in the manufacture of fibre products from this flax and thus a great industry may be opened up in the west in the near future.

If there is one branch of the paper business which more than another is enjoying a decided boom, it is the coated paper industry. The fact that all the plants have recently extended their facilities for output or are doing so at the present time, speaks volumes for the future of this sphere of the paper trade. The mills have received so many orders for special sizes that they have not even time to make up stock lines and double shifts are now working in the plants. The abounding pros-

perity of Canada has resulted in all commercial, industrial and mail order concerns using more coated stock than ever before. Nothing but the best will satisfy them and printing establishments are also doing a record trade. There has been a great deal of press work in this line owing to the Victory Loan issue and the literature, bonds, posters and other printed matter have kept many of the larger enterprises continuing their activities day and night. There is a shortage of skilled workmen and it looks as if the rush will keep up until well toward Christmas. This all makes more business for the paper mills.

Then, too, the specialty lines of paper are coming to the front and vegetable parchment will soon be produced in Canada for the first time. All waxing plants are working to capacity and the announcement that an American organization will establish a branch in the Dominion and turn out gummed papers, coated papers and waxed paper is an evidence of how the future is viewed by far-seeing concerns. It is felt, with the rapid consumption of paper not only in the Dominion but in other countries, there will be something doing for all the mills.

The plain truth of the matter is that there is what might be called a world shortage of paper. One of the latest countries to be clamoring for supplies is Belgium, where only about forty per cent of the machines are in operation and it will take, at least, three years for the industry to resume anything like normal production.

October has so far been a decidedly busy month for jobbers and slow deliveries in certain lines are still complained of. Advice received from the east are to the effect that taken altogether the arrivals of pulpwood have been the heaviest on record and the handling of the wood has afforded employment to a large number of men. In pulpwood operations there is a decided shortage of help in many centres but, with the closing of the saw mills at the end of the present month, it is expected there will be released a number who will make up for the deficiency. Wages in the camps are running from \$65 to \$75 per month and living conditions in the bush have greatly improved during the past few years.

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# WOOD PULP

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convinced.

In the book and writing line business is keeping up well and it is believed that two additional book and writing plants will be built in Ontario during the coming year. Envelope manufacturers are busy, paper box concerns never were rushed more than they are at the present moment and many are advertising for help. Another indication of the great future of the paper industry is evidenced in the fact that the prices of the offerings on the stock market continue to rise. The increase of values is based on the public conception of sound, progressive conditions, looking to Canada to become the greatest newsprint manufacturing country in the world within the next decade.

There is reported a slow delivery on the part of the railways, by some paper companies, and a recent return shows that 41,000 Canadian cars are withheld in the United States as against 23,250 American cars in Canada. The balance, which is on the wrong side, will be corrected, it is hoped, in the near future.

Export conditions are more favorable than they have been for some time and large quantities of bleached pulp and groundwood pulp are now going forward to Great Britain and other European countries. Stocks which had been accumulating for many months are now being reduced. On the whole, there is general optimism in the trade and nothing but big business seen ahead, with all prices holding but with no changes to record.

#### Pulp Prices.

	F.O.B. Mill.
Groundwood pulp .....	\$34.00 to \$36.00
Sulphite, news grade .....	\$75.00 to \$80.00
Sulphite, easy bleaching .....	\$92.00 to \$95.00
Sulphite, bleached .....	\$115.00 to \$120.00
Sulphate .....	\$87.50 to \$90.00

#### NEW YORK MARKETS.

New York, October 11.—On the surface the market for paper is lacking in the excitement and the snap of demand that prevailed a short while ago, but a steady and voluminous movement of supplies into consuming channels continues and no fault is found by manufacturers or merchants over the amount or character of business they are securing. The strike of printers and pressmen in New York has thrown a damper over the trade locally, which was to be expected, for with upwards of 50 trade papers and fiction periodicals having suspended publication for a time, the consumption of certain kinds of paper has materially decreased. The strike has now been on 10 days and how much longer it will last is a question. Both sides seem determined at the moment not to give in, but the situation appears to be reaching that point where something definite which may terminate the trouble might occur any minute. The book paper market has been chiefly affected by the strike. Reports from mill sections say that manufacturers as yet have not let up in their operations, however, which would indicate that not many, if any, publishing companies have cancelled deliveries. When it is understood that the average consumer of book paper was experiencing much difficulty prior to the strike in obtaining all the paper immediately needed, it is easy to see why publishers are permitting shipments to come along without interruption despite the closing down of their plants. Presumably most of them are taking advantage of prevailing conditions in their own field to store up supplies of paper so that when the strike is settled and consumption of paper is re-

sumed they will not be so dependent on prompt shipments from mills in covering their requirements.

Prices on book papers have not suffered, and the quotations named have been ruling for some time. Even should the tie-up of the printing industry in this city continue for quite a while it is doubtful whether paper prices would be materially influenced because mills are sold up so far ahead they are likely to reduce quotations simply on account of consumption being at a standstill in one corner of the market in this country. There is no denying that New York is the largest consuming center of book papers in the States; on the other hand, should this market be eliminated for a time the buying of consumers in other parts of the country should be enough to sustain values, particularly with mills facing such conditions as now exist.

Fine papers are moving in a steady manner and at firm prices. Raw material costs have receded to an extent, rag prices having eased off during the past few weeks, but this factor has little effect on present prices of paper because the product of mills now being delivered has been manufactured from raw stock purchased some time ago when rag prices were at their peak. Jobbers report consumers to be absorbing large amounts of writing papers and to be meeting the prices quoted without stopping to haggle. Fine paper mills throughout New England are reported booked far ahead in orders and to be frequently turning down orders owing to their unwillingness to enter into more commitments with the future promising so much uncertainty.

Wrappings are quotably firm and are sought in increasing volume. Merchants all over the country are laying in supplies to carry them through the pre-holiday period and are buying in quantities which will make sure they will not run short of stock. Tissues are firm and in good demand. Cover papers are in better call than they have been and quotations are gradually firming.

Activity in the board market shows no abatement though underneath the surface there is not quite the strength of tone that has been evident heretofore. This is probably due to box manufacturers for the most part having provided for their requirements up to the end of the year through orders placed with mills, and although board mills the country over have from four to six weeks' business on their books and are running full in their efforts to catch up with orders, there is not the undercurrent of demand that there has been in recent weeks. Then, too, reports concerning the installation of new machines in several of the eastern mills, which will materially increase the production of boards, have a deterrent effect on buying, for consumers are not as anxious about forward requirements as they would be if they thought there was danger of their not being able to secure all the board wanted. New boards are quoted hereabouts at \$65 per ton and plain chip board at \$60, but the probabilities are these prices could be shaded in some quarters.

GROUND WOOD.—Mechanically ground wood continues in good demand and prices rule steady at a range of \$35 to \$40 a ton F.O.B. grinding plants. Mills with very few exceptions have contracted for their output for several months ahead and have little supply to divert to the open market, so that buyers in search of spot lots for quick delivery are having trouble in locating pulp and manufacturers having ground wood for prompt delivery available are demanding and re-



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| 5  | 2 Allen Mixers.  | Friction Pulley & Mch. Co., Sandy Hill N.Y.    |
| 6  | 1 Complete Grinder. Stone 27 x 54.   | Cedar Point Grinder, Ticonderoga, N.Y.         |
| 7  | 4 Complete Grinders, Stone 26 x 54.  | Cedar Point Grinder, Ticonderoga, N.Y.         |
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| 9  | 10 Complete Grinders, Size 27 x 54.  | Holyoke Mch. Co., Holyoke, Mass.               |
| 10 | 2 Right and 2 Left Hand Holyoke Barkers, 54".  | Carthage Machine Co.                           |
| 11 | 1 Right and 1 Left Hand Carthage Barkers, 43".   | Portland Co., Portland, Maine.                 |
| 12 | 5 Right and 5 Left Hand Portland Barkers, 66".   | G. Hardman, Christiania, Norway.               |
| 13 | 1 Right and 1 Left Hand With-an Attachment for Portland Barkers.   | Ticonderoga Mach. Co., Ticonderoga, N.Y.       |
| 14 | 1 Smidth Pulp Refiner.   | Reeves Pulley Co., Columbus, Ind.              |
| 16 | 4 Paul & Trembly 8 ft. Sulphur Burners.  | Otto, Wandall, Walpole, Mass.                  |
| 17 | 1 Reeves Variable Speed Transmission Drives Size 8, No. 114, Class C.  | Bagley & Sewell Company, Waterton, N.Y.        |
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| 20 | 4 Warren Winders, 156".  |  |

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| 25 | 1—13" " 4' " 7 " 4-7/16 "                      |                   |
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| 27 | 1—12 x 16" Engine                              | Jones & Hitchings |
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PORTLAND, MAINE

ceiving top market prices. Even ground wood that has been held in storage for a year and longer is selling to-day at around \$35 and freshly ground spruce pulp of prime quality is fetching between \$37 and \$40, depending on the amount involved and the shipment desired.

**CHEMICAL PULP**—Chemical wood pulp is moving along in a consistent way and prices remain fully as firm as they have been recently. Demand for spot shipments is not as brisk, consumers apparently having covered their major requirements for a time, yet all the supply being offered at reasonable prices is finding a ready sale and it is safe to say that producers are experiencing greater trouble in filling commitments than in securing additional business. Newsprint sulphite is selling at \$70 to \$75 per ton, and most mills are refusing to accept further orders for present or future delivery below the higher figure. Domestic kraft pulp is moving in good volume at a price basis of \$90 a ton at the shipping point, while domestic soda fiber is quotably firm at \$90 to \$100. Bleached sulphite of standard quality and of domestic origin is selling at \$120 at the mill and is offered in sparse amounts, most manufacturers being sold ahead so far that they haven't any of their product to dispose of at present.

**RAGS**—Quietness and easiness are still the prominent characteristics of the rag market and little business of an important scope has been reported done this week. Foreign rags of diversified quality continue to come in from European countries in remarkably large lots, and as most of these rags have been bought by consumers here for shipment from the other side, their receipt puts many mills in a position where they can keep very much out of the domestic market. Dealers and packers therefore, when pressed to sell, are accepting lower prices to move stock, so that buyers are picking up lots of materials here and there at attractive prices. Nevertheless, opinion in the trade is strong that rags are due for an advance during the next weeks. Emphasis is placed on the fact that the rags arriving from Europe represent material accumulated there over a period of four years, and it is no secret that supplies in Holland, England, France and other countries where the bulk of rags imported into the United States come from are rapidly becoming depleted, this being reflected by sharp advances in prices in these countries. It is the contention of domestic dealers and packers that once importations diminish, paper manufacturers will of necessity have to come to them for rags, and they argue that this time is quickly drawing near. Sales of No. 1 old repacked whites of average quality are reported at \$7.50 per hundred pounds f.o.b. New York, of repacked thirds and blues at \$4 and of No. 1 new white shirt cuttings at \$15. Roofing rags are moving in relatively good volume at a price basis of \$2.65 to \$2.75 for No. 1 packing.

**ROPE AND BAGGING**—An easier undertone has been evident in the old rope market and prices have dropped slightly. No. 1 domestic Manila rope is now quoted at \$6 per hundred pounds f.o.b. shipping point and mills are said to be declining to purchase rope held at prices above this level. There is virtually no demand of consequence for scrap bagging, both roofing and tissue paper manufacturer being out of the market. No. 1 scrap is quoted at \$3 New York.

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

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# EDITORIAL

## FORWARDING FORESTRY.

One of the most significant events in the history of Canadian forestry occurred last week during the Conference of the Minister of Lands and Forests with representatives of the Woodlands Section of the Canadian Pulp and Paper Association and the Quebec Limit Holders Association. These gentlemen were qualified to speak for the Pulp and Paper Industry in Quebec as well as the extensive lumber interests of that province. Thus the important and ever growing crop of industries depending on the forest met on a friendly ground the representative of the province, which is the principal owner of forest lands, and discussed with him the subject of the reforestation and the administration of this great natural resource of Quebec.

The most significant feature of the conference was the appointment of a committee of three to act as advisors when called upon in matters of forest regulation and administration. The men chosen, Ellwood Wilson, W. Gerard Power and Robert Kernan, are men of ability and experience who have got not only a technical and practical knowledge of forests and forestry operation but in addition have a deep interest in maintaining our forests in a state of maximum productivity and in insuring a perpetual supply of timber for the continually expanding industries which depend upon the forest for raw material. Hon. H. Meceier, the new Minister of Lands and Forests, is well qualified for his position and with the broad and sound foundation that has been laid by his predecessor the Province of Quebec can be congratulated on its prospects of continued prosperity for its pulp and paper plants, saw mills and other wood using concerns.

It has always been recognized that when a settler breaks the ground for his first crop that he not only plants his grain and other seed in the soil but he plants himself in a new home, which is usually expected to remain the home of the family for generations. This permanency of location has usually not been considered in the case of the wood using industries. As a matter of fact, they are really branches of agricultural industry, inasmuch as the tree is a product of the soil. On this account it is quite as proper and just as important to consider the establishment of a paper mill as a permanent institution as it is to consider the planting of a farm as a permanent home. No one would think of moving a branch of Canada's great agricultural industry from county to county or from province to province. Once established in a place it is there to stay and the same should be true of the wood using industry of the province and the Dominion.

The plan of the new Minister and his advisors for a long term lease with provision for the encouragement of reforestation is a recognition of the fact that the forest is a crop produced by the soil and as such can and should be cultivated. With such encouragement we may hope that we shall soon see the last of such announcements as occasionally appear in our journals to the effect that such and such a company has timber limits sufficient for thirty years. We may now consider ourselves at the beginning of a period when no company will be permitted to build a mill with the apparent expectation of exhausting its supply of raw material within any definite period. Unless we are to be stigmatized in the future as the World's most selfish generation we must provide now for the permanency of our industries by insuring the perpetuation of supplies of raw material. Without question the most important of these which lends itself to perpetuation is the forest.

## THE UNITED STATES LABOR CONFERENCE.

It is significant of the state of mind prevailing on this continent that almost simultaneously in Canada and the United States there should have been called in the respective capitals of the two countries conferences intended to improve the relations between employers and their employees. The sessions at Ottawa were held under somewhat more auspicious circumstances than those in Washington and it is safe to assert that the spirit which promoted these gatherings will result, if it has not already resulted, in a considerably increased tendency to conciliation by both of the two parties involved in practically all industrial strife. It is hardly to be expected that such meetings can entirely eliminate conflicts because it is not always possible to foresee on what grounds future disputes may arise but a willingness and desire on the part of employers and employees to settle differences of opinion without recourse to violent means and industrial disturbances of a more or less wide spread character will not only be of great economic value to the workmen and his employer as producers of goods but will also be of great benefit, perhaps the greatest benefit, to the general public as the consumer.

It is not possible to disrupt the operation of one industry or even one plant without in some way affecting the whole industrial and commercial structure of the nation and common honesty and fair dealing require that there shall be an end to these disturbances. No difficulty has yet arisen between employer and employee which was not eventually settled by a com-

promise of some sort and there is no reason why such a compromise should not have been effected at the beginning when the cause for complaint was first discovered instead of waiting till factions had been formed and differences of opinion bitterly contested. An open wound is hard to heal. Some 2,000 years ago the advice was given to "Agree with thine adversary whilst thou art in the way with him" and this is certainly the best policy today.

#### GETTING TOGETHER.

After several years of regulation by the Government of the price of newsprint, representatives of manufacturers and publishers have come together and arranged the terms of what is likely to be a satisfactory agreement. At least there is now every hope of an amicable understanding.

#### COBWEBS.

The man said something who remarked that he could not afford to waste all his time making money.

Doesn't this invigorating weather make you feel like buying all the Victory Bonds you can stuff into your pockets?

It is rumored that the Board of Commerce may rule that newsprint paper is a necessity of life and therefore comes under its jurisdiction. The Paper Controller said last week that he had not heard of such a proposition and the chances are he is not greatly worried about the matter. The regulation of the supply of newsprint is a thankless job as far as the people of Canada are concerned. They are willing to rely on the manufacturers to stand by the Canadian publishers when it comes to a supply of paper.

There have recently been very large dealings in pulp and paper stocks in the various exchanges, particularly in Montreal. Pulp and paper stocks are one of the most attractive lines at the present time and hold promise as sound investments for satisfactory returns. There always will be some people who are not satisfied with a good thing, who wish to speculate with the possibilities. We are frankly sorry to see such a tendency in certain pulp and paper issues. A perusal of the market page of our daily papers would lead one to think that there are a number of "washed sales." Pulp and paper securities are good as they stand and it is very unfortunate to have any unsound inflation of values. We believe each issue should stand on the mill record and be entirely uninfluenced by a created or fictitious demand for stocks through manipulations of stocks.

The longshoremen's strike is likely to prove a temporary boon to the domestic rag market if it lasts for any appreciable time as importers are unable to move foreign rags on docks.—Daily Mill Stock Reporter.

In explaining processes of his mill, an American manufacturer said: "In the manufacture of jute test liners, we take the Swedish Kraft pulp and scraps of fibre papers, like these samples, made from sulphite, sulphate and all kinds of fibre papers which go under the paper stock trade name of Manila papers." Then there may be some ground for the complaint of misbranding we heard recently.

The Literary Digest "put one over" on the striking typesetters in New York. The magazine last week was printed from zinc blocks photo-engraved from type-written copy. Looks like a case of the striker struck.

An editorial in a Western paper a few days ago contained about a column on some figures evidently contributed by Mr. Imrie of the Canadian Press Association on the financial affairs of the Laurentide Company. It goes into considerable detail on the various issues of stock and the dividends that have been paid. No one questions the prosperity of the Laurentide Company and we venture to say that the majority of the Canadian public are not only pleased with it but feel that they derive, at least indirectly, considerable benefit from the prosperity of the paper mills that are making money.

In the last paragraph of the editorial in the Calgary Herald we read:

"In view of those figures, any argument by the paper manufacturers that they are being discriminated against when the price they are allowed to charge Canadian papers for news print is fixed by parliament, will be taken with large grains of salt."

The observant person will no doubt have noticed that the companies that have been able to pay satisfactory dividends, to provide for the future and to distribute something in the way of a bonus to their workmen are without exception the companies that export all or most of their product, while some of those which sell exclusively to Canada at the restrictive Government price do not seem to be mentioned among the winners.

#### WHERE SHALL HE GO ON SATURDAY.

It may be permitted, without impertinence or any desire to interfere with private affairs, to ask what the miner's womankind will say to a five-day week, with, of course, the inevitable five day's earnings that will accompany such an arrangement. By no method known to man can five days' work produce as much coal as six days' work. As the initiated know, Saturday morning, in ordinary households, is the time when men are not desired around the house, unless they desire to help in the domestic work. How will a healthy man occupy himself on Saturday morning? In the summer he can find occupation pleasant enough, but in Cape Breton the summer is all too brief.—Canadian Mining Journal.

Keep the steampipes clear of anything that will catch fire easily.

# The Canadian Coal Situation

The following is taken from the address on **Canada's Fuel Demand—An International and National Problem**, delivered, on 22nd August, 1919, by Mr. Arthur V. White at a recent annual convention of the Canadian Gas Association held at Niagara Falls, Ont. Its perusal clearly demonstrates the great importance of this subject, the gravity of which, so far as Canada's national welfare is concerned, can scarcely be overstated. Mr. White is Consulting Engineer to the Commission of Conservation of Canada.

United States' export coal is a phase of the world coal problem in which Canada is deeply interested, because she yearly imports from 15,000,000 to 20,000,000 tons of coal—anthracite and bituminous from the States.

## Countries May be Forced to Embargo.

Now, in the statement I am about to make I wish to emphasize that it is in no sense my intention to suggest that it is, or that it would become, the arbitrary desire of the United States to deprive Canada of the coal which at present is so necessary to life in this country. Of course with their co-operation, we have in measure become dependent upon their coal fields, and it will be expected that the States, in all fairness, will facilitate any necessary future readjustment connected with Canada's fuel supply. It is important, however, to take cognizance of the fact that a nation, pressed by the demands of its own people, may be compelled, under certain conditions, to deprive other nations—in part at least—of even the necessities of life until the needs of its own citizens are met. No country can be expected to send out of its confines that which is essential to the very existence of its own people. Personally, I do not believe that the United States or any other country with a large outlook on present world affairs, will allow whole nations, especially those with whom they have been allied, to suffer direct distress with respect to fuel without seeking to alleviate it to the greatest possible extent.

When communities in Canada and the States during previous coal shortages have been in need of coal certain communities adjacent to other sources of supply, such as wood, softer grades of coal, etc., were compelled to use them in order that the supplies elsewhere available could be distributed to those in greatest need. Correspondingly, it would not be surprising if a country like Canada, with vast fuel resources, were directed to speed up its utilization of its own fuel, and would not be left undisturbed, so to speak, in its enjoyment of burning what is now one of the luxuries of the world, namely, anthracite from the coal fields of Pennsylvania.

## Coal Conditions in the United States.

Let us next note what in general are the conditions in the great Republic across our border. Coal production in the United States has dropped substantially behind what it was during the war years. At the present rate of production of bituminous coal is maintained for the remaining 21 weeks of the coal year, the production will about equal the output of 1913. The production of anthracite is increasing over what it was a few weeks ago, but is still short of the demand. The coal stocks of the United States have been depleted. There is great demand for transportation. Car shortage

will accentuate itself with the demand for cars to move the grain crop. The exit of miners back to Europe, serious strikes, and other factors, have contributed to curtail coal production and distribution in that country. If more serious strikes should occur in the States, it will tend to make the supplying of coal to other countries, including Canada, still more precarious. Canada cannot afford to overlook how her own interests may at any time become involved by serious coal strikes in the States. These strikes are an ever-present menace. Speaking in the United States on August 8th, Senator King, of Utah, stated that he had heard "that there was a programme to organize a great strike now, tie up the transportation system and take over the railroads, then next winter, when the people were shivering for want of coal, organize another strike in the mines, cut off the country's fuel supply, and take over the mines." The Senator expressed the hope—and which we all share—that government authority will be able to prevent such extremes being reached. I simply quote the Senator's statement as indicating possibilities which he thought of sufficient importance to bring formally to the attention of his colleagues. It is clear, therefore, that coal production in the United States must necessarily fall short of meeting even the most pressing demands.

## Common National Aim and Sympathies.

Canada is indeed exceedingly fortunate in being neighbour to a country whose national aims and sympathies are so akin to its own. During the war both countries have manifested special interchange of courtesies. In the past coal shortage, for example, the Fuel Controller, Dr. H. A. Garfield, announced that recognition of Canada's needs for coal would be on the same basis as though she were one of the states of the Union. Our own Fuel Controller, Mr. C. A. Magrath, rendered signal services to both countries. I like to recall the sentiment manifested by our neighbours when great distress has arisen due to necessity corresponding to that begotten of the Halifax catastrophe—and such sentiment has been reciprocated by Canadians when conditions have been reversed.

Obviously, so long as such sentiments govern men's actions, the people living on this continent cannot be deprived of that which is essential to their existence. Nevertheless, with the growing scarcity of coal, the United States, no matter what her good will or desire towards Canada may be, may not be able to cope with her own and with the prevailing world need. There is no doubt that in the spirit and disposition manifested in the statements just quoted our neighbours will see that Canada is fairly dealt with. We should not, however, trespass unduly upon friendly accommodation.

## Canada Must Bestir Herself.

As we have now seen, the present need of coal is urgent and world-wide. If the United States, either in the interest of her own people or in the interest of peoples whom she may conclude to be more needy than Canada, should decide that it is more necessary to supply such nations with coal, with the result that Canada's normal supply be substantially reduced, who may reasonably find fault with such a course? Even apart from governmental action, could anyone find fault with the United States coal merchants if, in their efforts

to capture as much as possible of the 160,000,000 tons of annual international coal trade, they sought to deal where they could do so most advantageously? If, under such circumstances, Canada be judged to be not the best market for the United States coal dealer, from whence does Canada hope to supplement any substantial lack in supply of her coal demand? Let me emphasize the fact that there is nothing new in these possibilities so far as Canada is concerned. The handwriting on the wall has for years been legible. The whole problem has been one calling for ablest statesmanship and not for political or other temporizing and expediency. The problem will never yield to any makeshift policy. I have often marvelled that so little has actually been accomplished with respect to its permanent solution.

It is gratifying to realize that serious effort is now being made towards the development of our lignite and peat resources; also, towards the increased utilization of our coal fields in the East and in the West. I understand that work preparatory to the construction of the carbonized lignite briquetting plant to be erected under the direction of the Honorary Advisory Council for Scientific and Industrial research for the Dominion Government is being pressed ahead with despatch. This is to have a capacity of 30,000 tons of briquettes per annum. It would take over 600 such plants to replace our present coal importation from the States. However, we are very glad that this start has been made.

From the foregoing comments it is evident that an intelligent outlook upon the world conditions shows scarcely any aspect of them to be of more serious moment—immediate or prospective—than this coal problem. During these warm days we should be careful to take our counsel and warning from an intelligent outlook upon these conditions and what they betoken for the future, rather than from our feelings based upon the present stage of the thermometer. Whether conditions of curtailed fuel supply for Canada be delayed from materializing this coming winter or next winter or until some time in the future, nevertheless, as I stated before, I am firmly convinced that there is no menace to Canada's economic and general welfare at all comparable to the fact that she is at present so largely dependent upon a foreign country for her fuel needs. Without this foreign supply Canada most assuredly would be put to desperate straits. Gentlemen, is not the fuel problem of this Dominion one of magnitude and great gravity?

#### Canada's Water-Power Heritage.

Canada, it is true, is richly endowed with water-powers, but she can never depend upon this asset as a sole source of heat. We have about 19,000,000 estimated 24-hour low-water horsepower of which less than 2,500,000 horsepower has been developed. By no means may all the water-power be economically developed.

For many years past I have been emphasizing the comparatively limited use which can be made of electric energy as a wholesale substitute for coal for heating—including the heating of buildings. There is no use whatever entertaining hope that hydro-electric energy as a heating agent may become an adequate substitute for coal for the citizens of Canada, and consequently a realization of this fact will facilitate the concentration of effort upon sources from which real relief may be derived.

#### Canada's Coal Reserves.

What, then, is to be done? In a word, we must develop our own coal reserves. Considering the country as a whole, Canada in respect of quantity, quality and accessibility for mining purposes, possesses coal deposits which compare favorably with those of the greatest coal mining countries of the world. Speaking in round numbers, she has nearly 1,000,000,000 tons of semi-anthracite coal, 315,000,000,000 tons of bituminous coal, and 10,000,000,000,000 tons of sub-bituminous coal and lignite.

I shall not dwell on these enormous reserves. It seems out of place to emphasize how much we have latent when alongside of it we have no table to show how beneficially these assets are being used both for our own support and for the assistance of other needy nations. When the population of the Prairie Provinces are insured against yearly fuel shortage, we shall be more interested in hearing emphasis laid upon the enormous fuel reserves of these provinces; and when Canada produces more than her present amount of 2 per cent. of her total annual oil consumption we shall be more interested in hearing emphasis placed upon the statement that we have the biggest oil fields in the world.

Canada's only sane policy is to develop, and that as rapidly as possible, both her own fuel and power resources, and by co-ordination of transportation and other cognate agencies to provide for the distribution and storage of fuel in all communities of the Dominion. In some respects it is more important to move coal and have it adequately stored and distributed throughout Canada than it is to remove the grain out of the country.

#### MADE PAPER 250 YEARS AGO.

The Japanese paper industry was already established nearly 250 years ago, when the Dutch traders set foot in the country. Today, nearly 150,000 people are said to be employed, at an average daily wage of 24 cents. Labour at this price leaves plenty of room for price-cutting.

#### WIRE TIGHTENING ROLL.

This patent (granted to Mr. B. D. Coppage an American) describes a means for automatically maintaining a pre-determined constant tension in paper-forming wires and paper felts, etc., which are subject to contractions and extensions due to variations in temperature, moisture, etc. For example, a wire taken from the store house and placed upon a Fourdrinier machine may be subjected to a drop of 30 degrees in temperature, and the consequent shrinkage of the wire may be too rapid to permit the operator to properly adjust the tension roll bearings, so that the wire may be either immediately ruptured or slowly pulled apart.

The invention resides in providing a tension roll acting by its weight to apply tension to the belt and supported in bearings in rocker arms provided with counter weights to reduce the effective weight of the roll on the belt. The roll is permitted to float on the forming wire, rising and falling automatically as the tension increases or slackens while applying any pre-determined tension to the wire. The roll also automatically adjusts itself to positions out of the horizontal, and thereby is enabled to apply equal tension to both selvages when one is longer than the other.



# Centrifugal Pumps and their Use

Some Notes on Their Design, Application and Installation.

By F. A. McLean, Canadian Ingersoll-Rand Co.

(Concluded from Last Issue.)

## Efficiency of Centrifugal Pumps.

The efficiency of a centrifugal pump is highest at only one combination of head and capacity for each change of the speed at which it is driven, and therefore if it is operated at a speed other than that for which it was designed, the capacity in gallons per minute and amount of driving power required can only be approximately determined. When run at other speeds the efficiency is likely to be low, making the equipment unsatisfactory for the purpose for which it was installed, as well as expensive to operate.

Even though the increased power necessary to drive an inefficient pump is but a few per cent, it must be remembered that this excess power is continuously consumed while the pump is in use and will total up to a considerable sum in a year's time, often representing in dollars and cents more than the difference in first cost between an inferior and a properly designed pump. Sometimes this amount will equal the interest and depreciation on the entire installation for a similar period of time. Hence it is readily seen that the saving made by the good pump when compared with an inferior type will pay back its cost in a very short time.

## Correct Design of Wearing Parts.

There are a few parts of the enclosed impeller type of pump that are subject to wear, such as the sections of the shaft which are carried in the stuffing boxes and bearings, as well as the portion of the casing which makes a running joint with the impeller. These wearing surfaces should be provided with renewable parts, easily replaced at small cost, and the main or more costly parts being thus well protected will last a great deal longer, ensuring a low depreciation. The casing should be protected from wear around the impeller inlet by wearing rings secured in the casing, and a similar pair of rings mounted on the impeller used to protect it from wear also. Bronze sleeves fastened to the shaft and passing out through the stuffing boxes will ensure the shaft against scoring and rusting. Centrifugal pumps of the highest grade are usually provided with self-oiling, babbitted shell type bearings made in two pieces, spherically seated and so arranged that they may be removed when worn and either re-babbitted or replaced with a new set, so that the alignment of the impeller will not be disturbed and the close fit between it and the casing, which is so necessary to prevent leakage internally, will be preserved.

## Operating Conditions.

It may be readily seen from the foregoing that in designing a pump for a particular installation, it is necessary that the conditions of head, capacity and speed be correctly determined and furnished to the builder together with information regarding any special requirements which may be involved if the highest efficiency is desired. It should be understood that the centrifugal pump is not an extremely sensitive affair that will be efficient at only one particular combination of head and capacity, and uneconomical

when it is not possible to obtain these ideal conditions. The efficiency remains constant for a small variation on either side of the normal capacity, varying inversely as the head, and consequently it is usually better to figure the head a trifle higher than normal and design the pump accordingly, and then if the head should be a little bit less, a slight increase in capacity will be the result, which in most cases will not be objectionable. Sometimes it is possible to obtain two or more conditions of head and capacity from a pump of special design running at a constant speed with satisfactory results, and when some provision is made for speed variation the possibility of designing an efficient pump for variable service is greatly increased.

## Explanation of Total Head.

The make up of the total head on which a pump has to operate is as follows: The vertical static suction lift from the level of the liquid to be pumped to the center of the pump; The static discharge head which is measured from the centre of the pump to the point at which the liquid is discharged, and the friction in the piping, elbows, valves, etc., in both the suction and discharge lines, as well as the velocity head and entrance head. Another point to be considered, which concerns only the manufacturer of the pump, is the loss of head within the pump itself. The efficiency of the pump is the ratio of the power theoretically required to raise a given quantity of water against the total head to the sum of this power, plus the friction in the bearing and stuffing boxes and the hydraulic losses in the pump due to leakage, etc. These latter figures when worked out for any given pump represent its pump horse-power, or in other words, the total driving power required.

## The Effects of Variations in Speed.

Both the capacity and the total head of a centrifugal pump are affected by speed variation, and consequently considerable care must be taken to determine the speed at which a pump is to be operated so that its design may be governed accordingly. This is very essential in the case of pumps which are directly connected to constant speed alternating current motors which operate at slower speeds under no load than when fully loaded and cannot be conveniently regulated.

## Starting the Pump.

The impeller of a centrifugal pump possesses no positive displacement of itself and when running in air cannot create sufficient suction to be self priming, and, therefore, both the pump and suction pipe must be filled before starting. This may be accomplished by placing a foot valve on the lower end of the suction line and filling the pump and suction piping from the discharge line allowing the air to escape through an air cock on the top of the pump casing. Another method is to close the discharge gate valve and exhaust the air in the pump case by means of an injector allowing the foot valve to be dispensed with provided the pump is started while it is primed. When the pump has been primed it is ready to be started and should be brought up to its proper speed, and the discharge

valve opened. After the pump has been started, it will require but little attention; an occasional inspection of the bearings, from which the oil should be removed and new oil substituted from time to time is all that will be required. The so-called dynamo oil is well adapted for use in the bearings of centrifugal pumping machinery. Pumps intended for use with corrosive liquids are made of special metal, but the case should be opened occasionally and all internal por-

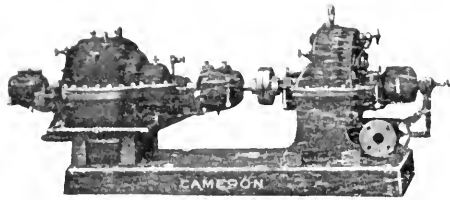


Fig. 6—Three Stage Turbine Pump, Driven by Steam Turbine.

tions thoroughly inspected. The presence of air or gases in the suction pipe will considerably reduce the capacity and pressure of the pump and care should be taken to avoid this trouble by properly baffling the suction pipe.

#### The Suction Lift.

When a centrifugal pump is once under way it will handle water or other liquids of the same specific gravity at ordinary temperature on as high a suction lift as the best reciprocating pumps or about 26 feet at sea level, provided the pump and suction piping are free from air and air leaks. It is usually difficult to maintain air tight suction glands and piping and the maximum commercial suction lift is therefore considered to be about 18 feet, although some manufacturers advocate not more than 12 feet whenever possible. The limit of suction lift is decreased by a rise in temperature of the liquid being pumped, and when the temperature of the liquid to be pumped is over 150 Fahr. it is better to have the pump so arranged that the water will enter it by gravity. In boiler feeding and similar service where water near the boiling point is to be handled, the best results will be obtained by making the suction piping as direct as possible, and allowing the water to flow to the pump under a head of from 6 to 10 feet, to eliminate the formation of vapour.

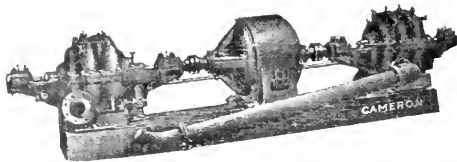


Fig. 7—Motor Driven Three Stage Turbine Pumps in Series.

As previously mentioned, the efficiency of a centrifugal pump is lowered by the presence of vapour, air or gas in the suction line which collect in the suction opening of the impeller, being the point of least pressure, and interfere with the passage of the liquid, thus seriously reducing the capacity of the pump or even causing it to lose its suction altogether.

#### Size and Arrangement of Piping.

All connecting discharge piping should be arranged to place no strain on the pump and it is usually advisable to make this from one to two sizes larger than the nozzle on the pump, using reducers at these points to make the connections. This will cut down the friction losses and makes the installation more economical to operate. In consideration of the marked advantage of small suction lift the intake pipe should be of as large a diameter and as short and direct as possible. The piping should be so arranged that there are no pockets for the accumulation of air and where these are unavoidable, some means of exhausting them must be arranged. The principles on which the action of the centrifugal pump is based require the liquid to be handled at high velocity. The intake and discharge opening are much smaller than those of a reciprocating pump of the same capacity, and in determining the sizes of pipe to be used, it is well to refer to a standard friction table such as is generally published by the various pump manufacturers in their cata-

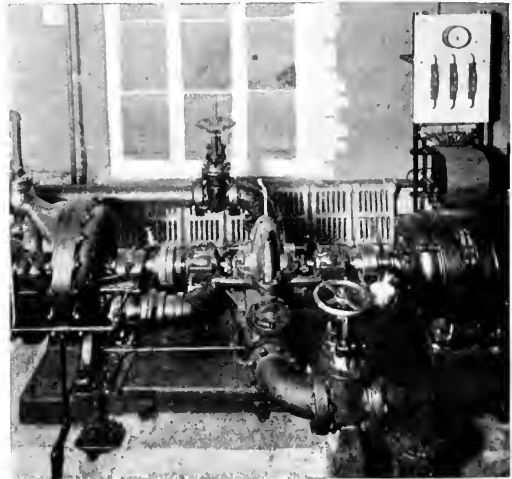


Fig. 8—Cameron Double Suction Volute Pump, Arranged for Steam, Turbine or Electric Motor Drive. Installed at the Public Markets, St. Boniface, Manitoba.

logues. In placing discharge piping it should be kept free of high spots and loops as any air bubbles which may be formed will interfere with the passage of the liquid being pumped.

A gate valve is usually fitted in the discharge line of centrifugal pumps so that the pump may be shut off the line when not in use or when open for repairs or inspection. A centrifugal pump will revolve in either direction and there is nothing to prevent the liquid in the discharge line from flowing back through it when not in operation. Consequently should the power be suddenly cut off, the impeller acting as a water turbine might be driven backward at a speed dangerous to both itself and its prime mover. A foot valve placed on the intake pipe or a check valve on the discharge line may be employed to eliminate this danger. Pumps operating at high pressure on which a foot valve is used, should be provided with a check valve on the discharge line to reduce the shock on the pump when the foot valve seats. It is a good plan

to put a by-pass around the check valve so that the pump may be primed should the foot valve start leaking.

Centrifugal pumps are usually fitted with heavy bed plates so as to allow the use of a small foundation, which must, however, be of ample strength to bear the weight and support the pump firmly. The pump must sit level on its foundation and be carefully aligned before being put into service. The pump, motive power, and bed plate of direct connected units which are purchased complete are generally accurately aligned by the manufacturer before shipment, but this alignment is very likely to be disturbed in shipment or by carelessly tightening up the foundation bolts before assurance is had that the alignment is correct.

Some manufacturers ship their pumps with the coupling bolts packed separately, so that alignment may be accurately made by placing a straight edge across the rims of the coupling and measuring the distance between the faces of the coupling. The couplings should not be connected until one is sure that the prime mover is moving in the direction that the pump is intended to rotate which can usually be told by an arrow cast or painted on the pump casing.

#### ACID PROOF LININGS FOR EXPERIMENTAL SULPHITE DIGESTER.

The problem of lining an experimental sulphite digester is different in many respects from lining problems encountered in commercial practice. The most important difference is that due to size. Others arise from the fact that in order to obtain quantitative yields, the experimental digester must be washed free from pulp immediately after each blow, and a lining which spalls off and produces a dirty pulp is unsatisfactory. It is out of the question to riffle the pulp and obtain reliable yields.

Many different kinds of linings were installed in the experimental digester at the Forest Products Laboratory before a satisfactory one was found. Because of difficulties due to size, tiling similar to that used in commercial installations was impractical. Lead was first tried, but was soon discarded on account of the "creeping" action of this metal when subjected alternately to heat and cold. Bronze was found to produce dirty pulp. A solid lining of litharge and glycerine lasted only a short time. Then cement briquets were made of many mixtures, given different coatings, and subjected to the action of sulphite cooking acid. The results of this experiment led to the installation of a lining of 1:1 cement and crushed quartz sand, 3 inches thick and coated with sodium silicate. This lining held up fairly well for some time, though particles of sand were continually falling off and causing dirty pulp.

It was finally decided that the only way out of the difficulty was to install a solid stoneware casting of acid proof tile 1-1/2 inch thick. As the digester is joined in the middle, the shape of the casting offered no particular difficulties. Liberal tolerances were allowed on all dimensions and openings difficult to locate were omitted in the casting. A stone cutter with an air chisel was able to put these holes through without breakage after the casting was in place and backed with cement. This lining has proved exceedingly satisfactory.—U. S. Forest Products Laboratory.

#### THE FIBRE CONTAINER AGE.

Shippers are thinking today more than they ever did before of the advantage of corrugated and solid fibre shipping cases for the packing of their products, because they realize that the fibre box is one solution of the problem of high freight rates and packing costs.

In 1915 and 1916, before freight rates were advanced, we received letters from many shippers in which they cited the saving in freight charges as one of the reasons for their adoption of the fibre package. Today freight rates are higher. Therefore this item of expense is a greater factor than it was before the world war.

We realized then that the day was to come when the fibre package would be the universal container for products within the size and weight limits of the freight classification. We could see the evolution working naturally in the shippers' minds when they told us the many advantages of the fibre box at that time. And the advantages, such as saving in freight charges, saving in time and cost of packing and sealing, saving in storage room, saving in loss, damages and pilferage, and saving in the cost of boxes, have all become bigger factors today than they were in the past.

We find shippers are now planning to reduce the size of their original packages to meet the classification requirements for fibre boxes. Where they shipped 100-pound original packages, they are substituting two 50-pound original packages and effecting a saving thereby. Where they shipped miscellaneous lots of cartons or cans in one box, they are planning to standardize their orders so that their customers will buy in dozens, two dozens, three dozens, fifties or other standard units that can be put in original packages.

As to canners, they wrote us before the war that they were using fibre boxes successfully for canned goods. In the recent overseas shipment of canned tomatoes in fibre boxes they had a wonderful demonstration of the practicability of these boxes for the shipment of such products. The boxes traveled in freight cars here and abroad, in lighters, in steamships and in canal boats, receiving the roughest handling possible in loading and unloading at many points. But they were delivered to the Army in Germany with a record of only 5.4 per cent set aside. You realize what this figure means when you know that 15 to 20 per cent loss was considered the average in package shipments to the Army. No longer can anyone question the practicability of fibre boxes for the shipment of canned goods.

Now we may look forward to the use of corrugated and solid fibre boxes for the export trade. We learned, much to the surprise of all concerned, that rope slings and nets could be used advantageously for handling fibre boxes in loading and unloading ships. As the government expert, Mr. Webb, said: "They came out of the nets like rubber balls when they were unloaded." The actual demonstration removed one of the chief objections of steamship officials, who contended that rope slings or nets would destroy the fibre packages.

Truly, the "fibre container age" has come. In other countries full recognition will eventually be given to the fibre box. And this acceptance will be brought about quickly since American boxes in the export trade will be sent in ever-increasing quantities to all parts of the world. We suggest that every boxmaker give his attention to manufacturing these boxes.—Fibre Containers.

Life is sweet. An accident might deprive you of it. Boost for safety.

### MET MINISTER OF FORESTS.

Montreal.—What was probably the most practical scheme for reforestation from a provincial point of view yet presented was brought before Hon. Horace Mercier, at Quebec last week, by a deputation representing the Canadian Pulp and Paper Association and the Limit Holders Association of Quebec Province.

According to one of the delegates, the plan presented was that certain lands in the province that were unsuitable for agricultural purposes or settlers should be set aside, and licenses granted for tree planting. A time limit of four years should be given for this purpose, and thereafter, if the stipulations were carried out properly, a further license should be given the tree planters for a period of 99 years, on payment of a certain sum per square mile. When the trees grew and were ready for cutting the property should be treated as ordinary Crown lands and a charge of so much per acre be made for cuttings, or stumpage dues. Thus those who were under the heavy expense of tree planting and waiting 35 or 40 years for the results of their labor should be compensated in the spruce and pine that would be suitable for pulp wood, and other purposes.

The deputation, which consisted of General White of Rirdon Pulp and Paper Co., Ellwood Wilson of the Laurentide Company, J. Dalton of the St. Maurice Paper Co., Dan McLachlin of Ottawa, W. Gerard Power of Quebec, A. L. Dawe, representing the Canadian Pulp & Paper Association, and others, were cordially received by the Minister. Mr. Mercier, the new Minister in charge of the department, made a very favorable impression on the lumbermen and pulp and paper men, as his experience formerly in the Mines Department, and trips through the woods had put him in close touch with conditions and the pressing need for reforestation. It was pointed out that in many cases settlers secured valuable timber limits and wantonly destroyed large quantities instead of conserving this.

Legislation, it is hoped, will be introduced defining those lands that are suitable for a settlement, and outlining the rights of settlers, as well as covering some plan of license for limit holders which will permit of bringing into effect a far-reaching policy of tree planting for the benefit of Canadians of the second or third generations.

In order to assist and co-operate with the Minister in formulating and carrying out a forward looking policy of forest administration, an advisory committee was formed that can be called on for advice and assistance in connection with any question relating to the forests of Quebec. The personnel of the committee assures the success of the idea, the members being: W. Gerard Power of the River Quelle Lumber Co., Robert Kernan of the St. Maurice Paper Co., and Ellwood Wilson of the Laurentide Co. Manufacturers of lumber, pulp and paper are represented.

### A VETERAN PUMPING ENGINE.

The earliest pumping engine made for sale by James Watt was put under steam again on September 17th and 18th. Watt went into partnership with Matthew Boulton at Birmingham in 1775, and the Birmingham Canal Co. bought the engine in 1776; it was working regularly from that date until 1892—one hundred and twelve years of active life.

Your body is a part of your capital. Don't invest it in the Bank of Careless Habits.

### MCGILL MEN INTERESTED IN PULP AND PAPER

McGill University, Montreal, is swarming with students. Practically every department is considerably increased in numbers and the congestion in the chemistry courses is so great as to cause some difficulty in finding accommodation for the large number who are interested in this branch of science. There will be about 15 men graduating in chemical work in science and there are 46 in the entering class in chemical engineering. Most of the seniors are interested in pulp and paper work and many of them look forward to employment in the industry at graduation next spring.

Dr. Ruttan, who is the head of this department, states that the activities of the Technical Section in assisting the placing of students in pulp and paper mills during the last summer has been exceedingly helpful and he hopes that this important work of the section will be continued. Dr. Ruttan thinks that too many boys want an easy time and that this summer work in mills is not only a fine thing for the way it connects the university with the industry but it is very helpful to the boys in getting them interested in actually doing something. He believes that the pulp and paper industry gives the student a greater variety of work and greater opportunity for observing the application of science to industry than any other work.

Dr. Ruttan has recently returned from England, France and Belgium where he was instrumental in helping organize an International Society of Chemists. When asked as to the state of chemical industries in Germany and the supply of such material from that country, he said that he had not been able to make any observations along that line, but that an incident significant of the wide awake attitude of the Germans is that a new edition of Beilstein is already on the market. Beilstein is the most comprehensive encyclopedia of organic chemical compounds there is and is as indispensable to a research chemist as his balance. The first volume is already in print and is being ordered faster than it can be supplied. The new edition has been brought up to the end of 1917 which shows that the enterprise of the Germans along scientific lines has not been very seriously hampered.

### INTRODUCING ARTICULATED ELECTRIC DRIVE.

Since mention was made in this magazine a few weeks ago of the advent of the "Harland Patent Interlock" for controlling the individual unit electric machine drive, a number of inquiries regarding it have been made. The many firms contemplating extensions and improvements will be interested to know that Mr. Carleton Anderson has come over from England to assist inquirers in understanding the interesting principles of this control and its application to paper machines. He reports an order for a 110 in. machine just prior to leaving England.

### BATHURST PLANS FOR PAPER MILL.

With the rumor that L. F. Houpt purchased the Camden Paper Co.'s mill at Camden East and will make newsprint instead of wrapping, there comes the report from Bathurst that Mr. McLean intends to erect a paper mill near the present pulp mill. That certainly seems more sensible than to ship pulp to Camden East for paper making. Taken in connection with the plans of the company for power development it looks like a well balanced proposition.

# Pulping Quality of American Woods

By Otto Kress, Sidney D. Wells, and Vance P. Edwards.  
Forest Products Laboratory, Madison, Wis.

(Concluded from last issue.)

**COTTON GUM**—*Nyssa aquatica*. Wt. 29 lb. Fiber 1.6 m.m.

*Range*—Coast region from southern Virginia to northern Florida, and through the Gulf States to Texas (Nueces River); northward through Arkansas, west Tennessee and Kentucky, southern and southeastern Missouri to southern Illinois (lower Wash-bash River).

*Common Names*—Large Tupelo (Ala., La., Tex.); Tupelo Gum (Ga., Ala., Miss., La.); Sour Gum Ark., Mo.); Swamp Tupelo (S.C., La.); Cotton Gum (N.C., S.C., Fla.); Tupelo (N.C., S.C.); Wild Olivetree (La.); Olivier a grandes feuilles (La.); Olivetree (Miss.).

## Sulphite Pulp

Yield 1,160 lb. Easily bleached.  
Easily pulped. Poor strength—fair color.  
*Possible Uses*—Same as aspen.

## Soda Pulp

Yield 1,200 lb.  
Character—Soft, but harder to bleach than aspen.  
*Possible Uses*—Similar to aspen.

**RED GUM**—*Liquidambar styraciflua*. Wt. 27 lb. Fibre 1.6 m.m.

*Range*—From Connecticut (Fairfield County) to south-eastern Missouri and Arkansas; south to Florida (Cape Canaveral and Tampa Bay) and Texas (Trinity River).

*Common Names*—Sweet Gum (Mass., R.I., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ill., Ind., Ohio); Laquidamber (R.I., N.Y., Del., N.J., Pa., La., Tex., Ohio, Ill.); Red Gum (Va., Ala., Miss., Tex., La.); Gum (Va.); Gumtree (S.C., La.); Alligator-wood (N.J.); Bilsted (N.J.); Starleaved Gum; Satin Walnut (Lumber markets).

## Sulphite Pulp

Yield 1,190 lb. Difficult to bleach.  
Easily pulped. Very poor strength. Dark colored.  
*Possible Uses*—Few.

## Soda Pulp

Yield 1,080 lb.  
Character—A little more difficult to reduce than aspen. Soft and hard to bleach.  
*Possible Uses*—Same as aspen.

**RED OAK**—*Quercus rubra*. Wt. 35 lb. Fibre 1.5 m.m.

*Range*—Nova Scotia and southern New Brunswick through Quebec and along the north shores of Lake Huron to near Lake Namekagon; south to middle Tennessee and Virginia, and along the Appalachian Mountains to northern Georgia; west to eastern Nebraska, central Kansas.

*Common Names*—Red Oak (Me., Vt., N.H., Mass., R.I., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ga., Ark., Mo., Ky., Ill., Ind., Iowa, Nebr., Kansas, Mich., Minn., S. Dak., Ont.); Black Oak (Vt., Conn., N.Y., Wis., Iowa, Nebr., S. Dak., Ont.); Spanish Oak (Pa., N.C.).

## Sulphite Pulp

Yield 1,600 lb. Easily bleached.  
Easily pulped. Very weak—poor color.

*Possible Uses*—Few.

## Soda Pulp

Yield 1,400 lb.  
Character—Very difficult to pulp and bleach.  
*Possible Uses*—Few.

**WHITE OAK**—*Quercus alba*. Wt. 37 lb. Fibre 1.5 m.m.

*Range*—From southern Maine to southwestern Quebec and through central and southern Ontario, lower peninsula of Michigan and southern Minnesota to southeastern Nebraska and eastern Kansas; south to northern Florida and Texas (Brazos river).

*Common Names*—White Oak (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ala., Fla., Ga., Miss., La., Tex., Ky., Mo., Ohio, Ill., Ind., Kansas, Nebr., Mich., Wis., Minn., S. Dak. (cult.), Iowa, Ont.); Stave Oak (Ark.).

## Soda Pulp

Yield 1,480 lb.  
Character—Difficult to pulp and bleach.  
*Possible Uses*—Few.

**SYCAMORE**—*Platanus occidentalis*. Wt. 29 lb. Fibre 1.7 m.m.

*Range*—Southeastern New Hampshire and southern Maine to northern Vermont and Lake Ontario (Don River, near north shores of the lake); west to eastern Nebraska and Kansas, and south to northern Florida, central Alabama and Mississippi, and Texas (Brazos river and thence south to Devils river).

*Common Names*—Sycamore (Vt., N.H., Mass., Conn., R.I., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ga., Fla., Ala., Miss., La., Tex., Ky., Ark., Mo., Ill., Ind., Iowa, Kansas, Nebr., Mich., Wis., Ohio, Ont.); Buttonwood (Vt., N.H., R.I., Mass., N.Y., N.J., Pa., Del., S.C., Ala., Miss., La., Tex., Ark., Mo., Ill., Nebr., Mich., Minn., Ohio, Ont.); Buttonball-tree (Mass., R.I., Conn., N.Y., N.J., Pa., Del., Miss., La., Mo., Ill., Iowa, Mich., Nebr., Ohio); Buttonball (R.I., N.Y., Pa., Fla.); Planetree (R.I., Del., S.C., Kans., Nebr., Iowa); Water Beech (Del.); Platane (La.); Cottonier (La.); Bois puant (La.) Oo-da-to-cha-wun-nes—"Big stockings" (Indians, N.Y.).

## Soda Pulp

Yield 1,300 lb.  
Character—Soft, easily bleached.  
*Possible Uses*—Similar to aspen.

**BLACK WILLOW**—*Salix nigra*. Wt. 21 lb. Fibre 0.8 m.m.

*Range*—New Brunswick to southern Florida and west to eastern Dakota, Nebraska, Kansas, Oklahoma, southern Arizona, and south into Mexico. (In California Sacramento River to Arizona.)

*Common Names*—Black Willow (N.H., Vt., R.I., N. Y., Pa., Del., S.C., Fla., Ala., Miss., La., Tex., Ariz., Cal., N. Mex., Utah, Ill., Wis., Mich., Minn., Nebr., Kan., Ohio, Ont., N. Dak.); Swamp Willow (N.C., S.C.); Willow (N.Y., Pa., N.C., S.C., Miss., Tex., Cal., Ky., Mo., Nebr.).

*Sulphate Pulp\**

Yield 1,150 lb. Easily bleached.  
Easily pulped. Very weak—excellent color.  
*Possible Uses*—Same as aspen.

*Soda Pulp*

Yield 950 lb.  
Character—Soft and easily bleached.  
*Possible Uses*—Similar to aspen.

**BEECH**—*Fagus atropuricea*. Wt. 36 lb. Fibre 1.2 m.m.

*Range*—Nova Scotia to Lake Huron (north shores and northern Wisconsin; south to western Florida and west to southeastern Missouri and Texas (Trinity River).

*Common Names*—Beech (Me., N.H., Vt., Mass., R.I., Conn., N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ga., Ala., Fla., Miss., La., Tex., Ark., Ky., Mo., Ohio, Ill., Ind., Mich., Nehr., Minn., Ont.); Red Beech (Me., Vt., Ky., Ohio); White Beech (Me., Ohio, Mich.); Ridge Beech (Ark.).

*Soda Pulp*

Yield 1,530 lb.  
Character—Slightly more difficult to reduce than aspen—soft, easily bleached.  
*Possible Uses*—Same as aspen.

**RED ALDER**—*Alnus Oregona*. Wt. 28 lbs. Fibre 1.2 m.m.

*Range*—From Sitka (through islands and coast ranges of British Columbia, western Washington, and Oregon) to California (coast ranges to Santa Inez Mountains, near Santa Barbara).

*Common Names*—Alder (Cal., Oreg.); Red Alder (Cal., Oreg.); Western or Red Alder.

*Soda Pulp*

Yield 1,160 lbs. Soft, a little harder to bleach than aspen.  
*Possible Uses*—Same as aspen.

**SHORTLEAF PINE**—*Pinus echinata*. Wt. 31 lb. Fibre 3.7 m.m.

*Range*—From New York (Staten Island) to Florida (Chattahoochee region) and west to southern Missouri, eastern Oklahoma, and northeastern Texas.

*Common Names*—Yellow Pine (N.Y., N.J., Pa., Del., Va., N.C., Ala., Miss., La., Ark., Mo., Ill., Ind., Kans., scarce); Ohio; (Eng. lit.); Shortleaved pine (N.C., S.C., Ga., Ala., Miss., Fla., La., Tex., Ark.); Spruce Pine (Del., Miss., Ark.); Bull Pine (Va.); Shortleaf Pine (Del.); Pitch Pine (Mo.); Poor Pine (Fla.); Shortleaved Yellow Pine; Rosemary Pine (N.C.); Virginia Yellow Pine (Va. in part); North Carolina Pine (N.C. and Va. in part); Carolina Pine (N.C. and Va., in part); Slash Pine (N.C., Va., in part); Oldfield Pine (Ala., Miss.).

*Sulphate Pulp*

Yield 1,450 lb. Strong, but coarse fibre.  
*Possible Uses*—Similar to white spruce.

**TULIP TREE**—*Liriodendron tulipifera*. Wt. 26 lb. Fibre 1.8 m.m.

*Range*—From Rhode Island to southwestern Vermont and west to Lake Michigan (through southern Michigan as far north as Grand River); south to Florida, southern Alabama, and Mississippi, west of Mississippi River in southeastern Missouri and adjacent Arkansas.

*Common Names*—Tulip Tree (Vt., Mass., R.I., Conn., N.Y., N.J., Del., Pa., Va., W. Va., D.C., N.C., S.C., Ga., Ark., Ky., Ohio, Ind., Ill., Ont.); White-wood (Vt., Mass., R.I., Conn., N.Y., N.J., Del., S.C., Ky., Ohio, Ill., Mich., Ont.); Yellow Poplar (N.Y., N.J., Pa., Del., Va., W. Va., N.C., S.C., Ala., Ark., Ky., Ohio, Ind., Mo.); Tulip Poplar (N.J., Del., Pa., S.C., Ill.); West Virginia Poplar (Pa., Del., Md., W. Va.); Poplar (R.I., Del., N.C., S.C., Fla., Ohio); White Poplar (Pa., Ky., Ind.); Blue Poplar (Del., W. Va.); Hickory (Va., W. Va., N.C.); Popple (R.I.); Cucumber tree (N.Y.); Canoe wood (Tenn.); Old Wife's Shirt-tree (Tenn.); Ko-yen-ta-ka-ah-ta—White-tree (Onandaga Indian, N. Y.); Basswood (Ohio).

*Soda Pulp*

Yield 1,150 lb. Soft and easily bleached.  
*Possible Uses*—Same as aspen.  
(*Finis.*)

**TRANSPORTATION TOPICS.****Freight Car Situation.**

The Canadian Railway War Board is authority for the statement that there is at the present time, particularly in Eastern Canada, a very severe shortage of box cars, which they state is almost entirely attributable to the continued failure of United States roads to return to their owners cars belonging to the Canadian railways which are on their lines.

At the present time there are 44,000 Canadian owned box cars on United States roads, as compared with 20,650 box cars belonging to the United States Railroad Administration in Canada; an adverse balance, from the Canadian standpoint, of 23,350 cars.

The car situation in the East will continue to be serious until the grain crop is moved.

The Canadian Railways state that repeated promises have been received from the United States Railroad authorities to hurry the return to the Canadian lines of box cars belonging to them, and the last few days show that some improvement has been made. It is to be hoped that this improvement continues; but even if it does, the box car supply in Eastern Canada for the next few months will be anything but plentiful and Canadian railways will no doubt continue their policy of refusing to allow their own cars to be loaded to points in the United States, which will mean that pulp and paper shippers will have to depend upon foreign cars to move their products to U.S. points.

Another condition pointed out by the Canadian Railway War Board is that there is bound to be a considerable number of coal cars belonging to United States roads in Canada, continually. There is a shortage of coal cars in the United States, and the U.S. Railroad Administration is clamoring for the prompt return of this class of equipment sent to Canada with loads. Failure of Canadian lines to return this equipment promptly hurts their chances of getting box cars back from the U.S. roads.

There is no doubt the railways appreciate the efforts which have been made during the last few years by the shipping public generally to load cars to capacity, but with the foregoing conditions existing it will be apparent that shippers and consignees will be serving their own interests by releasing with the least possible delay cars received by them loaded with coal or other freight, and also by loading their outward cars to capacity.

\* Because of lack of wood, an insufficient number of pulps on this material were made. The yields appear abnormally high.

# Textbook on Pulp and Paper Manufacture

Progress continues to be made in the preparation of the textbook, as the following outlines show:

## OUTLINE OF SECTION ON TREATMENT OF PULP.

By J. O. MASON, Grand Mere, Que.

Readers are requested to make any suggestions or criticisms that will be helpful to the author.

### A.—Introduction.

I.—Subject covered in section. II.—Scope of subject, III.—Description of pulp as it leaves digester or grinder pit.

### B.—Processes.

#### I.—Storage:

- (a) Reasons.
- (b) Process and ideal apparatus.—1. Consistency of stock.
- (c) Actual apparatus.—1. Capacity of container. 2. Material of container.

#### II.—Coarse Screening:

Separately for G. W., Sulphite, Sulphate, Soda.

- (a) Reasons.
- (b) Process and ideal apparatus.—1. Consistency.
- (c) Actual apparatus.

#### III.—Riffling:

- (a) Reasons.
- (b) Process and ideal apparatus.—1. Consistency.
- (c) Actual apparatus.

#### V.—Fine screening:

- (a) Process and ideal apparatus.—1. Description of pulp after coarse screening. 2. Purpose of fine screening. 3. Qualities secured. 4. Ideal individual screen.

(a) General details. I. Container. II. Screening element. III. Agitating element.

(b) Essentials to be considered.—I. Cleanliness of output. II. Cost of operation and upkeep. III. Power per ton screened. IV. Capacity and efficiency of unit. V. Space required. VI. Consistency.

(c) General difficulties and remedies.—I. Broken screening element. II. Cleaning screening elements while running.

#### (b) Apparatus:

1. Flat or suction screens. (a) Principle. (b) Description. (c) Particular points on operation.
2. Centrifugal screens. (a) Principle. (b) Vertical shaft type. (c) Horizontal shaft type.
3. Rotary Screens. (a) Principle of outward flow.

#### (c) Ideal screening system:

1. Arrangement of individual units to (a) take advantage of gravity flow, (b) use minimum of piping and pumping.
2. Linking of individual units into proper combination. (a) Flat. (b) Centrifugal.

#### V.—Slushing:

1. Reasons for.
2. Process and ideal apparatus.
3. Actual process. (a) Consistency to and from deckers. (b) Utilization of water. (c) Regulation of consistency.
4. Actual apparatus. (a) Feltless or pneumatic machines. (b) Couch roll type. (c) Thickener type. (d) Heavy consistency decker. (e) Special deckers. (f) Consistency regulators.

#### VI.—Lapping machines:

- (a) Reasons for.
- (b) Process and ideal apparatus.
- (c) Actual apparatus.
  1. Ordinary wet machine. (a) Single cylinder. (b) Double cylinder.
  2. Hydraulic pressure press roll.
  3. Thin sheet machine.
  4. Continuous doctoring.

#### VII.—Hydraulic presses:

- (a) Reasons.
- (b) Process and ideal apparatus.
- (c) Actual apparatus. (1) Press. (2) Pumps. (3) Desirability of pure water. (4) Accumulators. (5) Baling press.

#### VIII.—Savealls:

- (a) Reasons for.
- (b) Process and ideal apparatus.
- (c) Actual apparatus:
  - (1) Wire screen type. (a) "Pneumatic." (b) "North."
  - (2) Felt type.
  - (3) Settling tanks.

#### XI.—General apparatus:

- (a) Pumps.
- (b) Conveyors.
- (c) Suction pumps.
- (d) Valves and piping.
- (e) Filters.

## OUTLINE OF THE SECTION ON MANUFACTURE OF SULPHATE PULP.

The following is but a bare skeleton of a rather large subject. It may, however, suggest to readers some item the author may not think to include. If any one has a suggestion, or reminder, or a bit of information please advise the editor at once.

Preparing the wood.  
The chipper and the crusher.  
Sorting the chips.

#### The Liquor Room:

The causticizing tanks.  
The lime and the green liquor.  
General practise in the liquor room.  
Employment of filter arrangements.  
The lime mud.  
Analysis.

#### The Digester Room:

Brief theory of the cooking process.

Equipment and general introduction.  
 Various types of digesters and cooking systems.  
 Factors of importance for the quality of the product and the yield of the digester.  
 Digester room practice.  
 By products.  
**The Diffuser Room:**  
 The open vat and the diffuser.  
 Arrangements of diffuser room.  
 Curves showing results of washing with different arrangements.  
 Washing and dumping the diffuser.  
 Black liquor analysis.  
**The Evaporators:**  
 Direct evaporators.  
 Indirect evaporators.  
 The operation of each type.  
**The Furnace Room:**  
 General.  
 The rotary furnace.  
 The smelter.  
 The dissolving tanks.  
 Black liquor and blackash.  
 Salt cake.  
 Draft and air for the furnace.  
 The product of the furnace and its analysis.  
 Losses in the furnace.

#### QUESTIONNAIRE FOR PAPER MACHINE MEN.

Information on the following topics is desired by the author of the section on Paper Machines for the text book that is being prepared by the Pulp and Paper Industry. A cordial response will be greatly appreciated by the Joint Committee on Vocational Education.

1. What kind of a couch roll jacket do you prefer for the following: news, fine writing, bond, tissue papers?
2. What qualities must a felt possess to enable it to pick up wet paper from another felt: i. e., how must it differ from the other felt?
3. Please specify and describe the weight, kind and quality of felts you would order for the 1st, 2nd and 3rd presses for news, wrapping, fine writing, bond, tissue, cigarette papers.
4. Please specify and describe the weight, kind and quality of dryer felts required for the same grades of paper.
5. Which do you prefer, an upright or a revolving reel for papers you have made, and why?
6. What direction with respect to the mould's revolutions would you recommend for the stuff in a cylinder vat, when stuff is free or slow, and why?
7. What qualities should a good machine tender possess? Detail his duties.
8. What qualities should a good back tender possess? Detail his duties. Same for third hand.
9. How do you guard against plugging a set of presses?
10. How do you guard against plugging a calender stack?
11. Describe the quickest ways to get started when the paper gets wound up in the dryers.
12. How do you give warning when starting up so as to avoid accidents?
13. Describe proper methods of handling ends through presses, dryers and stacks and especially at high speed.
14. What precautions should be taken to care for rolls of clothing when running; when shut down?

15. Give methods of detecting spots, holes and lumps on clothing without removing them. Can these be remedied without shutting down, thus saving wash ups?

16. Give instructions for washing up.

17. Describe the kind of watchfulness that will keep the felts and wire running straight, avoiding wrinkles, etc.

18. Give methods of avoiding ridges in wire. Give ways of correcting them and of remedying cracks in the edge.

19. Describe proper methods of putting on felts and wires, also care of these in stock.

20. Describe ways of telling whether rolls are pressing properly, giving adjustments to correct improper pressing.

21. Give use of doctors, care of same, and precautions against scoring rolls.

22. Describe felt suction boxes and blow rolls, their use and abuse.

23. Discuss crowning of rolls. Discuss ways of telling whether rolls are properly crowned or whether the fault lies in poor alignment.

24. Describe ways of keeping going despite certain breakdowns without impairing quality of product.

25. Give specifications of good paper machine room, roof, ventilation, avoidance of drip, floors, etc.

Note: In order to avoid duplication of effort, persons who are able and willing to assist the committee by giving any of the information asked in the questionnaire are requested to advise the editor as to what topics they are prepared to write about.

#### BIG CUT OF ABITIBI LUMBER.

Quebec, October 21.—The total cut of wood expected during the coming lumbering season in the Abitibi region will reach seventy million feet of cut and prepared lumber. This is unprecedented in bulk totals. There are at present in the Abitibi region, fifty-five saw mills in operation and they work almost the whole year round. The coming season's cut is under way with excellent prospects.

#### NEW PUBLICATIONS FOR THE PAPER TRADE.

##### The Paper Industry.

A number of interesting pieces of literature have been received by the Pulp and Paper Magazine that we wish to acknowledge. In the first place is the "Paper Industry," which is published in Chicago and is the organ of the newly formed Paper Mill Superintendents Association. It is recognized nowadays that an organization does not get very far without an official organ and if the Paper Industry does no more than promote the organization it stands for its existence will have been fully justified. It is a monthly publication well worth being received and carefully read by anyone connected with the industry. Peter H. Massey is the editor and Edward B. Fritz, publisher.

##### A Finnish Paper Journal.

Another paper journal that is new to us, and we may also add strange, is *Finsk Pappers-Och Travarutid-skrifts*. This is a case where we can see our "Finnish" but not understand it. We expect, however, to find among Scandinavian friends someone who will be able and willing to review the articles that appear in this journal so as to give our readers the benefit of information of interest to the Canadian industry, either in the form of translations or abstracts such as appear on our Technical Section page.





## Technical Section



**K-12. Graded temperature for paper machine dryers.** (Perfectionnements aux machines à papiers.) Fr. patent No. 492,269. Edward Partington, England. La Papeterie, 41, 279, (Aug. 25, 1919). The first dryers are heated rather strongly so that the temperature of the paper is about 93 deg. C. The following dryers are less strongly heated, either all at the same temperature or with a gradual decrease in temperature to avoid overdrying.—A.P.-C.

**K-4. Notes on the cooking of rags.** (Notes sur le lessivage des chiffons.) C. Negri, via Industria della Carta. La Papeterie, 41, 289-90, (Aug. 25, 1919). Cf. P. & P.M., 17, 573-4, (1919).—A.P.-C.

**L-7. Processes for making paper textiles and yarns.** E. O. Rasser. Papierfab., 16, 621, 645, (1918); Chem. Zentr., 90, p. 114, (1919). Through J. Soc. Chem. Ind., 38, p. 281A, (1919). The softness of the yarn stands in relationship to its roundness, smoothness, and moisture content. The yarn leaves the spinning discs with a moisture content of 39 per cent, and the spinning machine at 20-25 per cent. In the weaving sheds it is worked with not more than 15 per cent of moisture. Moistening on the slitting machine, or by dipping the rolls, or in special chambers has not answered so well as damping on the spinning machine. In selecting a chemical softening agent, preference is given to those which do not decrease the tensile strength and which prevent the development of moulds. Mixtures of glycerin with a little carbolic acid are used; glycerin residues are also suitable. Alum is employed, but owing to its acid reaction it is not quite free from objections. For testing softened yarns a number of instruments have been devised, but their indications would not appear to be so accurate as the determination of tensile stretch. A comparison of the elongation values affords a measure of the softness of the paper yarn. Strips cut from the machine direction of the paper have a smaller elongation than those cut from across the web; the mean of the two values is therefore taken. For softening paper textiles, soaps are employed or, alternatively, the textiles are boiled for a long time in a weak solution of sodium carbonate, sometimes with the addition of sodium sulphide. For the preparation of soft, water-resistant fabrics, mixtures of casein-lime with soap and aluminium acetate are employed, also mixtures of sodium carbonate, sometimes with the addition of sodium sulphide. For the preparation of soft, water-resistant fabrics, mixtures of casein-lime with soap and aluminium acetate are employed, also mixtures of sodium carbonate, lithopone, and calcined lime with alum, and mixtures of hydrogen peroxide, ammonia, soap, lime, talc, and aluminium acetate. A waterproofing composition is made from a solution of parchment waste in cuprammonium. The fabric impregnated with this solution is freed from copper by steeping in a solution of ammonium sulphate and aluminium acetate.—A.P.-C.

**L-7. Cellulose and artificial silk textiles.** A Kramer. Monatschr. Textilind., 33, p. 81, (1918). Chem. Zentr., 90, p. 118, (1919), through J. Soc. Chem. Ind., 38, p. 281A, (1919). Cellulose yarn, on account of its high strength, serves as a substitute for hemp in the manu-

facture of machine belting, girths, hose-pipes, and twines.—A.P.-C.

**L-0. Machine for gumming envelopes.** (Machine pour gommer les enveloppes et vernir tous autres genres de papiers en feuilles.) Fr. patent No. 492,488. Philippe Ferlay. La Papeterie, 41, 276, (Aug. 25, 1919).—A.P.-C.

**R-0. Effect of War upon papermaking in Sweden.** Consul General Albert Halstead, Stockholm, in U.S. Commerce Reports. Weekly Bull., Dept. of Trade & Commerce, 21, p. 198, Jul. 28, 1919. The war had a very serious effect upon the papermaking industry of Sweden through causing a great scarcity of the chemicals used in the manufacturing processes. These became almost unobtainable, while the prices advanced without reason; this was particularly true of sulphur. No information is available as to what substitutes were used. Though the war contributed very largely to the advancement of prices, especially in 1916, it was not the only factor, for the paper mills formed a combination which bound the members to the strictest accountability and provided for a very high fine when any manufacturer sold below the fixed rates. This naturally led to a further increase, and prices are now several times those prior to the war. The cost of labor has gone up very materially, while the supply is lessened. The paper mills, and the banks which hold large quantities of their notes, declare that the prevailing prices are justified by the cost of production. For a period this condition checked trade, but recently England has been buying, and it is understood that there have been inquiries from France, which have improved the situation a little, but some of the banks are showing signs of nervousness because of the comparative slowness of the sales. It is impossible, however, to state definitely the effect of the war on the paper industry. Many mills made a great deal of money, but their export trade was greatly disorganized because of high prices and the scarcity of shipping facilities.—A.P.-C.

### TRADE SCHOOLS AT LA TUQUE AND HULL.

The provincial Government has authorized the Council of Arts and Manufactures to establish a drawing and trade school in La Tuque. The provincial secretary, Hon. L. A. David, had an interview with the president, Mr. Thomas Gauthier, and the secretary, Mr. J. P. L. Berube, yesterday regarding this question and Mr. Berube was instructed to proceed to La Tuque and make proper arrangements with the city council, in order to open the school in November.

The expenditure of \$50,000 for a Technical School at Hull has also been authorized. The city fathers have voted to help on the good work by paying \$10,000 a year for support and maintenance.

The new U.S. rules for packing express packages apply also to parcels originating in Canada, says the American Railway Express Co. It is necessary after Dec. 10 to use wood or fibre board for packages over 25 pounds in weight.



# UNITED STATES NOTES

The daily newspapers of New York City, according to an estimation received recently made of the newsprint used by the leading newspapers in the United States, are shown to be the largest actual consumers of newsprint although Chicago takes first place in the matter of the average number of pages issued daily. Chicago's dailies average 24 pages a day as against New York's 21. This plainly shows that instead of there having been a decrease in the use of newsprint there has been quite an increase, and because of this fact no alleviation of the restricted newsprint situation appears to be in sight.

The Seaman Paper Company, 208 South La Salle street, Chicago, sole agent for more than a dozen big paper mills, faces some difficulty in keeping its output somewhere close to the large demand for paper being made just now. A four day strike recently at the Bryant Paper Mill, Kalamazoo, Mich., one of the mills supplying paper to the Seaman people, hit the latter hard. As the output of this mill is 300 tons of paper daily, the loss of four days reacted seriously on the Seaman Company.

Failure of the lower house of Congress to pass various tariff bills and the dye licensing bill has caused Senator Reed Smoot of Utah to introduce in the Senate a sweeping measure to prevent the dumping on American markets of products which Germany hopes to use as the entering wedge in her campaign to regain the monopoly which she enjoyed before the war. The greatest of these commodities is dye-stuffs. Investigations by the alien property custodian have revealed the extent of the former German control of this market, the methods by which she stifled American competition, and her elaborate preparations for seizing once more this advantage as soon as the treaty of peace is ratified. Millions of pounds of dyes and other chemicals, produced during the war as a by-product of the munition factories at little or no expense, are lying in Germany ready for instant shipment, if such shipment is possible. This flood of German goods would come into the United States markets at any price low enough to kill off American manufacture. Because there appears to be no hope of passing at this session of Congress pending bills designed to prevent this dumping process, the Smoot bill is being introduced in the Senate as a "stop-gap" measure until such time as Congress can devise a thorough and comprehensive plan to protect the American manufacturer. The provisions of the Senate dye bill overcome the objection raised by many Congressmen that in providing for a licensing system and another governmental bureau a vicious principle would be introduced into legislation.

During the last month the British American Chemical Company, which began last spring to operate soon after its organization a big plant at Ridgefield Park, N. J., has opened up markets in many of the South American countries and also in Japan. The market for the company's products is becoming world wide, and installations tending toward their greater production are now being made to meet the increased demand from all corners. In virtually every instance these

foreign shipments are taking the place of the German products.

Martin L. Griffin, chief chemist for the Oxford Paper Co., Rumford, Me., has resigned to take a position in Taunton, Mass., with a firm making cellulose fibre textiles. Mr. Griffin has been an enthusiastic member of the Technical Association of the Pulp and Paper Industry and chairman of the committee on Soda Pulp. He is one of the "old reliables" when there is important work to be done. Many readers of the Pulp and Paper Magazine know Mr. Griffin through his interesting articles. The good wishes of his many friends go with him in his new work.

Twenty seven men left the employ of the B. D. Rising Paper Co., Housatonic, Mass., to serve in the war. Twenty six are back at work in the mill. The other lies in France.

Mr. James W. Sewall of Old Town, Maine, reports that there seems to be considerable increased activity in timberland circles in the northwest. His business of estimating and valuing timber reflects such activity to a marked degree and forms a fairly good barometer of conditions. His office is engaged in surveying, and ing spirally around its surface. This effect is caused by acres of land scattered from New York through New England to the very northern end of New Brunswick. Ordinarily at this time of year timber cruising work becomes quiet. This seems to auger well for business conditions in general.

## ENGLISH CHINA CLAY.

English China Clays, Ltd., are going the right way to extend the popularity of the important article of manufacture which they produce. They have just issued a neat little folder which tells "The Story of a Lump of China Clay" in brief but fascinating style. Letterpress and a set of neat illustrations present what is nothing less than a romance, while the innumerable directions in which china clay is used will be a revelation even to those who know its excellent qualities as a raw material in papermaking.

At the National Exposition of Chemical Industries, Chicago, the booth of the Pulp and Paper Magazine of Canada attracted quite a lot of attention through the unique electrical display of animated lights installed in the various pillars of the railing, and for which we were indebted to the Commercial Utilities Mfg. Company of that city. The Spirallite lamp, which is illustrated herewith, is used as an advertising device for window display and other places. It is extremely original and consists essentially of a large illuminated white glass globe having bands of brilliant color rotating spirally around its surface. This effect is caused by rotation of a basket of narrow strips of celluloid about the lamp. The turning is due to a slight current of air that is kept running by the heat of the lamp. There has already been created a big demand for this device in Canada, and a Canadian branch has been established by Kent & Lajoie, 814 New Birks Bld., Montreal.



# PULP AND PAPER NEWS

The Kitchener Envelope and Stationery Co. is a new firm which has begun the manufacture of envelopes and allied lines in Kitchener, Ont.

W. E. Coutts, greeting card publisher, has removed to 145 Adelaide street west, Toronto, where he has commodious quarters.

The work on the third story of the finishing room of the Interlake Tissue Mills, Merriton, Ont., has been completed. An extension, 125 x 100 feet, which is now being built to the beater end of the plant, is well under way and will be finished by the end of next month. The addition is of brick, steel and reinforced concrete. W. J. Trimble, of Toronto, is the contractor.

W. B. Fredericks, representing the Diamond State Fibre Co., Bridgeport, Pa., who manufactures glassine, greaseproof and vegetable parchment paper as well as filler, press and fibre board, was in Toronto during the past week on business. It is understood that the company will soon establish a branch in Toronto where they will carry stock. For some years they have done a large business in the Dominion.

There is no joy for the small boy in Toronto, Montreal and other cities at the present time as the ten cent paper covered novel is now a thing of the past. For twenty years or more the showy paper volume that sold at a dime, has been a time honored article with all stationers and newsdealers. Publishers have announced that, owing to the upward trend in the cost of material and labor, it has been necessary to eliminate the historic institution and now all such books will cost the purchaser fifteen cents a copy.

Major J. R. Bell, of Business Systems, Limited, Toronto, and T. J. Allen, Vice President of Paper Sales, Limited, Toronto, have returned from an extended motor trip through New York State, the Berkshire hills, Massachusetts and the Mohawk trail to Boston. En route they paid a visit to many of the leading paper mills in Holyoke and surrounding cities.

Captain D. B. Taylor of Woodstock, Ont., who for several years was advertising manager of Rod and Gun in Canada, returned recently from service overseas and has been appointed assistant manager of the Canadian Press Association, Toronto. Captain Taylor, who is a brother of W. J. Taylor, managing director of the Woodstock Sentinel-Review, has already entered upon his new duties. He went over to England in the fall of 1916 as paymaster of the 168th Oxford battalion and was later with an Artillery unit in France and before returning home was paymaster at the hospital adjoining Bramshott camp in England.

It is understood that the sale of a controlling interest in the Toronto Paper Mfg. Co. to the Howard Smith Paper Mills, Montreal, will not cause any change in the staff of the former company except that the President, R. S. Waldie, will retire and devote his whole time to the lumber and other interests with which he is connected. The Toronto Paper Mfg. Co. has four machines and produces about thirty tons of paper a day and will continue to specialize on many lines. There is also a sulphite department connected

with the plant equipped with three digesters, which turn out from ten to twelve tons a day, or about half the requirements of the paper mill in this line. The pulp is bleached.

While towing a raft of six thousand cords of pulp wood to Ashland, the steam tug Traveller of the Russell Timber Company's fleet, of Port Arthur, sprang a leak off Otter Island and was compelled to cut the raft loose and proceed into Ashland, Wis. The raft was picked up later and was found to be intact.

John Hewitt died recently in Grimsby, Ont. For many years he was engaged in the map manufacturing business in Toronto and purchased an interest in the Miehle Printing Press Co., which he later disposed of. In Grimsby, he was a leading figure in the business and financial life of the village.

A charter has been granted to the Red River Paper Mills with headquarters in Winnipeg, and a capital stock of \$150,000. The organization of the company is expected to be completed soon.

Gilbert Rooker, who has been assistant manager of the Canadian Press Association, Toronto, has concluded his services with that organization and left recently for Fort William, Ont.

It is understood that L. F. Hontp of Buffalo, N.Y., and others associated with him, have purchased the Camden Paper Mills of Camden East, Ont., and that it is the intention of the new interests to convert the product of the plant into newsprint in the near future. For some time the mills have been turning out kraft and wrapping paper.

E. A. Crippen, paper mills representative, Toronto, was in Quebec this week being subpoenaed as a witness in the suit of the Continental Bag and Paper Co. vs. Price Bros. and Co. for alleged breach of contract in the delivery of bag paper.

A charter has been granted to the Valley Lumber Co., Winnipeg, with a capital stock of \$200,000 and, among the powers conferred on the organization, is to manufacture, sell and deal in pulpwood and the manufacture of pulp. Among the provisional directors are John S. Hough, George M. Gelley, Harry H. Dunwoody and David Wilson.

George Carruthers, President of the Interlake Tissue Mills, Toronto, was in Montreal and Quebec this week on a business trip.

The ratepayers of Peterboro will vote this week upon a bylaw to purchase a site and building at a cost of fifty-seven thousand dollars, which will be leased for a term of years to the Nashua Gummed and Coated Paper Co. of Nashua, N.H. The building which will be occupied by the new industry, is the former Cordage Works in the south end of Peterborough, which during the war was used by Stickney Motors. It is announced that the Nashua company in their new Canadian plant will devote special attention to the wax paper end. They make a machine for the wrapping of bread, which seals sixty loaves a minute. In addition to their regular paper products the company started in this line of business when various cities in the United States and

Canada employed rollers to wrap their loaves and considerable quantities of wax papers were sold for the purpose. In order to make the sealing of bread more popular the company invented a wrapping machine, which they are now selling in Canada in large numbers through a subsidiary concern. One reason why the company desire to locate a branch in Canada is to supply paper for their machines without the handicap of a forty two per cent duty. Another reason is that they can purchase all materials in the Dominion. The company does a large business in photo papers. These will not likely be manufactured in Peterborough at first but this branch may be developed later on. The Nashua Co. also intends to go after the export paper line and they wish the benefit of the British preferential tariff. The company will at the outset employ thirty hands in their new Canadian plant.

The Abitibi Power and Paper Co. of Iroquois Falls, Ont., have organized a forestry department and have selected a site for a nursery east of Twin Falls, where ten acres of land have been cleared and made ready for actual operations next spring. It is proposed to clear and prepare a similar ten acres until a maximum of fifty is reached and thus will be developed the source of supply for the new Reforestation branch.

As stated recently a federal charter has been granted to Lumber and Pulpwood of British Columbia, Limited, with a capital stock of \$1,000,000, and headquarters at 120 Bay St., Toronto. The officers of the company are: President, Joseph Oliver, Toronto; vice president, E. V. Tillson, Tillsonburg; see-treasurer, John W. Gordon, 120 Bay St., Toronto; directors, James A. Thomson, Hamilton, and George C. Goodfellow, Montreal. The company has been incorporated for the purpose of manufacturing lumber and cutting pulpwood from the valuable timber limits secured in 1908. The limits are situated on the watershed of Abnau Lake and Willow River, Caribou District, B.C., and consist of forty-nine square miles of standing timber. It is estimated that the holdings will produce over 500,000,000 feet, board measure, of good general-purpose lumber and 250,000 cords of the finest pulpwood. About 80 per cent of the timber is white spruce, 10 per cent red pine, 10 per cent white or balsam fir, with a small stand of red fir. The company proposes to erect a complete saw-mill plant with a capacity of 100,000 feet in ten hours, and to install the most up-to-date machinery.

In regard to pulpwood, it is stated that this industry is merely in its infancy in the Pacific Coast province, and it is pointed out that 1 cord of B.C. spruce will produce 2,305 lbs. of ground pulp wood. The company adds that should it be considered desirable when conditions warrant, the organization will be recapitalized or a subsidiary company formed to manufacture both pulp and paper, and if such a mill were erected, all edgings, slabs and other mill waste could be utilized.

#### Bathurst to Build a Dam.

Plans have been prepared for a hydro-electric power development at Grand Falls, on the Nepisiguit River, for supplying power to the Bathurst Lumber Co., Bathurst, N.B., in connection with their lumber mills and pulp plant. The current will be transmitted over a transmission line, with steel poles, to Bathurst, a distance of 19 miles. Two units will be installed, provision being made for a third. Each unit will be 4,500 h.p. The turbines will be of the vertical umbrella type, direct connected to generators and will work under a head of 100 feet. The dam and powerhouse—the former 450 feet long—will be constructed of con-

structed of concrete. Mr. William Kennedy, Jr., of Montreal, is the hydraulic engineer and Dr. L. A. Hurdtt, Montreal, the electrical engineer.

The London, Ont., Week-End Mirror, which is an independent, illustrated weekly publication, has made its appearance. The proprietor is Wallace J. Laut, formerly managing editor of the London Advertiser.

#### HODGE-SHERRIFF PAPER CO., LONDON, ENGLAND.

Captain Hugh Doherty, O.B.E., who has recently been demobilized after serving in France and Belgium for four and a half years, has joined Hodge-Sherriff Paper Company at their London office. Captain Doherty has had a very varied experience in all branches of the paper trade, originally with the old established firms of Sapalding & Hodge, Ltd., and R. T. Tanner & Co., Ltd., London, England, and afterwards with the Parsons Trading Co., New York, where he gained a valuable insight into the export trade. Captain Doherty's experience should prove a valuable asset to Hodge-Sherriff Paper Company.

Howard Smith Paper Mills, Ltd., are putting out a new line of paper, "Velour Art." for book and folder work. It is a soft, smooth paper with an "English" finish and permits very attractive printing with duo tone and one color halftone work, besides giving a clear, bright impression of type.

#### PAPER MAKERS AND PUBLISHERS AGREE.

An important conference was held in Montreal Tuesday afternoon between committees representing Canadian newspaper publishers and manufacturers of newsprint. There has been a growing tendency for the two parties in the dispute over paper prices to get together and arrive at an understanding. It is probable that a satisfactory agreement will result from Tuesday's conference.

It is reported that the committees approved a continuation of the \$69 price to the end of the year, with the understanding that during the first six months of 1920 the price, if increased, shall not exceed \$80 per ton. The recommendations of these committees will, of course, have to be accepted by their principals before coming into force. It must also be remembered that the Paper Controller is still on the job and has the power to set the actual price in Canada. It is expected that he will approve and sanction any arrangement that is satisfactory to the manufacturers and publishers.

It is stated that the negotiations were conducted in the friendliest possible manner, with each side ready to give and take so far as reasonable in the matters at issue and both interests eager to bring to an end a long drawn-out and, at times, acrimonious controversy.

The result of the conferences should have a highly beneficial effect upon the Canadian pulp and paper industry generally, especially in its relation to the export situation. Owing to the newsprint shortage in the United States, predictions are heard in well-informed quarters that the Canadian product will be able to command as high prices as from \$85 to \$90 per ton early in the coming year.

The germs are at work, even at night. Have plenty of fresh air in your bedroom.



### CANADIAN TRADE CONDITIONS.

Toronto, October 20.—While there are no changes to record in market prices and everything in the pulp and paper line moves along favorably, not a few surprises in the way that the stocks are being bought up on the exchanges and in the rapid rises have arisen. There seems to be a feeling in the air that Canada is on the greatest boom ever, not only in pulp and paper but also in other industries. Large newsprint companies are making extensions to their properties and it is rumored that one company, which has been making wrappings, will convert its product into a newsprint one at an early date. The clamor for this commodity keeps up and never did the Canadian dailies use so much. The advertising, which they have been carrying of late, has been tremendous and daily journals, which formerly ran from ten to sixteen pages, are in many instances twice that size, not to speak of the extraordinarily large Saturday editions. This demand is likely to continue all the fall owing to active business and strong advertising campaigns. There is now talk of new dailies being launched in three places in Ontario, which does not look as if the high cost of print paper is driving publishers from the field or to the wall as has been alleged by the Canadian Press Association in some of the "canned" articles which were printed a few weeks ago when criticizing the course and conduct of the Canadian Paper Controller for not reducing the price.

Book and writing mills are very busy and one of the big surprises was the acquisition of the Toronto Paper Mfg. Co. by the Howard Smith Paper Mills and the rapid rise in the selling price of the stock of both companies. Now, it is rumored, that a large block of stock has been acquired in a well known paper company in Quebec province by prominent English and Canadian financiers. Other projects are in the wind and thus paper stocks continue to be leaders. Formerly the newsprint offerings were the ones which attracted most attention but shares in book mills are also coming in the limelight.

The market for all lines of paper continues good and prices remain firm with the demand heavy. Board mills are away behind in their orders and so are most

all other plants. Kraft is in excellent requisition particularly M G, and one company is sold up until April next while in unglazed it is several weeks behind and purchasers are urged to place orders now in order to be assured of delivery. The figure continues the same at nine cents in car load lots.

There are still numerous requisitions from foreign countries for Canadian paper, which for the most part have to go unsatisfied owing to the brisk state of trade at home. It is probable that some Canadian firms will turn their attention more to blotting paper in the near future. It is understood that Canadian mills were not able to supply nearly all the requirements of the Victory Loan committee for the printing of blotters to boost the present campaign.

There is a stiff demand for mechanical pulp, which has, at last, come to its own in price and some plants are away behind in deliveries. The call for sulphite, both bleached and unbleached, continues and, even with increased production on the part of the Canadian mills, the demand for the latter commodity can not be overtaken.

In the rag and paper stock market there are several calls for the more expensive grades with the cheaper lines moving as usual. The market on cotton rags continues quiet with prices, however, holding fairly well. Roofing mills are not buying, being overstocked at present and quotations are nominal just now. In sheathing papers, wall board and other lines connected with the building trade there is a large volume of business and it moves on with a steady swing. One indication of the prosperity in the publishing business is the announcement of several newspapers of an increase in their advertising rates, and then there has been launched, in two or three cities, week-end periodicals devoted to special local topics. More weeklies are now becoming all home print propositions and thus in many ways the welfare of the publisher is being brought in evidence. Other papers are increasing in size in spite of the alleged high cost of production.

Jobbers report business during the present month as being the best in the history of the trade so far this year and, if the record keeps up until the end of 1919, it will be the banner period with the majority of them.

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES <sup>8311</sup>  
8312 MURRAY HILL,  
8313

NEW YORK

We buy all kinds  
of Canadian

# WOOD PULP

At Top Prices.  
Write us and be  
convinced.

Deliveries on a number of lines are still slow. Wax paper plants are rushed, coating mills are adding to their staffs and putting on double shifts, and envelope factories and paper box concerns were never busier than they are at the present time.

There is a scarcity of labor at many centres for the lumbering and pulp wood camps and the tendency of wages is to increase while the cost of all supplies keeps climbing. This will make pulpwood dearer. At present, there is a fair market for pulpwood but a number of companies, who went out of the business during the latter part of the war, owing to uncertain conditions, contemplate entering again. The settlers are also getting busy and are cutting more pulpwood this fall than has been the case for some time but, even with the increased production, there will not be more wood than the mills can absorb as production is being augmented by the pulp plants. There is no omen on the horizon that paper prices in any line will be lower but there are numerous signs that they will all be increased sooner or later.

**Rag and Paper Stock Prices.**

F.O.B. Toronto.

No. 1 white envelope cuttings	.....	\$4.75
No. 1 soft white shavings	.....	\$4.00
White Blanks	.....	\$1.75
Heavy Ledger Stock	.....	\$2.65
No. 1 magazine	.....	\$2.30
No. 1 book stock	.....	\$1.75
No. 1 manilas	.....	\$2.30
No. 1 print manila	.....	\$1.50
Folded news	.....	\$1.10
Over issue, news	.....	\$1.00
Kraft	.....	\$3.25
No. 1 clean mixed papers	.....	90c
No. 1 shirt cuttings	.....	14½c to 15c
No. 1 unbleached cotton cuttings	.....	13c to 13½c
No. 1 fancy shirt cuttings	.....	10c to 11c
No. 1 blue overall cuttings	.....	11c
Bleached shoe clip	.....	13c
White cotton hosiery cuttings	.....	13½c
Light colored hosiery cuttings	.....	11c
New light flannellette cuttings	.....	10½c
No. 2 white shirt cuttings	.....	11c
City thirds and blues (repacked), No. 1	.....	4½c
Flock and satinettes	.....	\$2.70
Tailor rags	.....	\$2.80
Gunny bagging	.....	33½c to 4c
Manila Rope	.....	53½c to 6c

**NEW YORK MARKETS.**

New York, October 18. Continued firmness and activity are the outstanding characteristics of the paper market. From all quarters complaints are heard over the difficulty in securing supplies from mills, and there is no question that manufacturers the country over are equally as busy at present as they have been in recent weeks. Mills with few exceptions are booked well ahead in orders, the majority being sold up until the end of the year, with some accepting business to be filled during the first part of 1920. Consumers and jobbers in common are experiencing added trouble in covering their wants, and the situation is rapidly getting to a point where price is a second consideration to that of obtaining deliveries.

The strike of printers in New York City and vicinity continues, yet this fact has thus far had little important effect on the paper market. One would think that with the printing industry in the chief consuming center of the country almost completely tied up, de-

mand for book papers would be materially diminished, but prevailing conditions in the paper market are so abnormal that the suspension of activity in the printing trade locally has failed to have perceptible influence. This is readily explained by the fact that publishers, with very few exceptions, have not cancelled orders with mills, the generally policy pursued being to acquire all the paper to be had to store up against future requirements. Mills consequently continue to work at maximum production and seem loath to enter into engagements further off, so that buyers seeking to place fresh orders are having no little trouble in doing so. Machine-finished book papers are selling freely in the jobbing trade at 9.00 to 9.25 cents per pound, while mill quotations range from 8.75 to 9.00 cents. Superclendered book papers are quotable at the mill at around 9.50 cents.

Extreme firmness exists in the newsprint market. Consumption is steadily increasing and manufacturers are pushed to their limit to turn out sufficient supply to cover the wants even of their regular customers. Offerings of spot shipments of news have practically entirely disappeared. Mills virtually as a unit have contracted for their output for the balance of the year and have little or no stock to divert to the open market, so that the occasional spot lots of roll newsprint finding their way into the market are readily fetching 5.25 to 5.50 cents per pound in sales to consumers. Newspapers all over the country are using up their supplies of paper at a rapid pace, and indications are that a near famine in newsprint will arise before many weeks have passed unless conditions develop under which consumption will be brought more in line with the present production.

Coarse papers are in a strong market position but there is not the scarcity of stock that characterizes some other kinds of paper. Manufacturers are busily engaged and are sold ahead for an appreciable period, yet buyers appear to be having no serious difficulty in acquiring additional amounts of wrapping and tissue papers when they need them. Prices are firm and the tendency is decidedly toward higher levels. The board market is steady and active. Most mills have from six to eight weeks' business on their books and are running full in an effort to catch up with deliveries. The strike of paperbox workers in New York is about ended and the consumption of board locally, as well as in other parts of the States, is daily increasing as box manufacturers broaden the scope of their operations in turning out product for the pre-holiday season. Plain chip board is selling in the East at \$60 per ton at the mill and news board at \$65. Instances are heard of from time to time where manufacturers have shaded prices to secure large orders for forward delivery but the great bulk of board now being sold is realizing full quoted values.

**GROUND WOOD.**—Demand for mechanically ground wood rules brisk and the market displays a strong undertone. Newsprint mills are absorbing all the supply offered for prompt and future shipment and grinders are occasioned no trouble in securing the prices asked in practically every selling transaction. Spruce pulp of prime quality is selling at \$38 to \$40 per ton at producing mills and there is no question that a considerably larger business could be effected if manufacturers had more pulp to dispose of.

**CHEMICAL PULP.**—A good healthy trade continues to pass in chemical wood pulp. Consumers are buying in a consistent manner and signs are not wanting that the bulk of the supply moving is going direct

# WOOD PULP TRADING CO., Ltd.

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NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

into consumption, which gives the market tone a healthy character. Arrivals from Scandinavia continue light, and such pulp as is coming in from the other side is playing a very small part in the market here because practically all of it has been sold to arrive and therefore fails to augment available supplies for trade purposes when received. Reports from Sweden and Norway say that prices there are steadily advancing and that there is scant likelihood that shipments to the United States will materially increase between now and the time when the Baltic closes for the winter. The outlook therefore is that consumers on this side will be obliged to get along as best they can on the production of Canadian and American mills until at least next spring. Unbleached sulphite for newsprint quality is firmly quoted at a range of \$70 to \$75 per ton at pulp mills and is actively sought. There is also a strong demand for easy bleaching sulphites and for Mitscherlich sulphite, which are offered in sparse amounts. Kraft is moving freely at a price basis of \$90 for No. 1 standard kraft, and bleached sulphite of No. 1 quality is selling at from \$120 upwards per ton.

**RAGS.**—On the whole there has been little improvement to the rag market during the current week. Certain classes of rags, roofing stock in particular, have moved in slightly larger volume, but consuming mills have refused flatly to go beyond chosen levels in purchasing supplies, so that only those dealers and packers willing to do business within the price ranges quoted by buyers have been successful in effecting sales. No. 1 roofing rags are selling at between 2.65 and 2.75 f.o.b. shipping point, with most of the supply changing hands at the lower figure. Mixed satinets, or No. 2 packing of roofing stock, commands no more than 2.65 cents, while most sales are being made at \$1 to \$2 per ton below this level. Felt manufacturers seem satisfied to pay these figures for rags and frankly acknowledge they do not desire to see prices go any lower at this time, presumably realizing that should values decline further collections of rags would likely decrease to a sufficient extent to create a shortage of material. Old white rags are firm in price and sales are reported of No. 1 repacked whites at 7.50 and 7.75 cents f.o.b. New York and of No. 1 miscellaneous packing at 6.75 and 7.00 cents. Thirds and blues are moving in scattered directions at receding prices, current quotations on repacked blues ranging from 3.50 to 4.00 cents, depending on the quality and amount of these rags involved. New cuttings are rather easy and mills as a rule are managing to acquire supplies at recessions.

**PAPER STOCK.**—Low grades consumed in the manufacture of box boards feature the present movement of old paper stock toward mills. High qualities are sought in moderate volume but there is not the snap to the demand for them that there is for news and mixed paper and mills are not obliged to pay top prices asked to secure supplies. No. 1 mixed paper is selling at 80 to 85 cents per hundred pounds New York and flat folded news at around 90 cents. No. 1 hard white shavings are quotable at 5.00 to 5.25 cents and soft white shavings of No. 1 quality at 4.00 to 4.25 cents. Book stock is decidedly weak and prices continue to go down. Mills using heavy book and magazines are occasioned no trouble in placing orders at 2 cents f.o.b. New York and some have doubtless bought at lower levels. There is a fairly consistent fall for kraft and manila paper and prices show little

change. No. 1 packing of kraft is selling at 3.30 to 3.50 cents per pounds, while No. 1 print manilas are quoted at 1.50 to 1.80 cents and No. 1 container manilas at 1.10 to 1.20 cents.

**ROPE AND BAGGING.**—Demand for serap bagging is very nearly at a standstill and prices are gradually easing off. Important consuming mills are doing little or no buying, and those in the market are acquiring stock at very much their own figures. No. 1 serap is offered freely at 2.75 cents per pound New York and roofing bagging at 2.25 cents, but these comparatively low prices appear to attract few consumers and the movement of supplies is light. Old rope also is in restricted demand and quotations tend downward. About 6 cents New York is the price most mills quote and indications are they are securing all the supply wanted at this basis.

#### TREES OF HARRICANAW-TURGEON BASIN.

The principal trees and shrubs occurring in the district are: black spruce, white spruce, jack pine or banksian pine, white birch or canoe birch, poplar, balsam, balsam of Gilead, tamarack, white cedar (Upper Harrieanaw, Otter lake, and Abitibi lake), red pine (Abitibi only), yellow birch, black ash, mountain ash, maple, wild red cherry, alder, willow and moosewood or mountain maple.

Black spruce is commercially the most important tree in the district. It occurs in all the clay areas and reaches a diameter of 2 feet or more in the well-drained strips along stream channels and the prominences of the rolling southern part of the district. This wood was extensively used for ties on the Transcontinental railway and is now the chief tree cut for pulpwood. The only red pine observed in the district was on some rocky islands in lake Abitibi; this appears to be the northward limit of pine in this part of the country. The northward limit of maple occurs in the upper Harrieanaw basin about latitude 48° 25'. The farthest point north at which cedar was observed was in Otter lake. The northern half of the district is largely muskeg. Practically all of the timber in the district, which is of sufficient size for commercial purpose, is found along narrow strips bordering the streams and in the hilly southern part of the sheet; but this timber cannot be utilized under present conditions because the streams flow north away from the railway and the settlements. The timber in Abitibi basin at the southwest part, however, is not under this disadvantage and considerable quantities of pulpwood and lumber are being cut around Makamik lake, La Sarre river, and the Okikodosik. The lumber trade of Amos draws its supply from the forests on the banks of upper Harrieanaw river.

Land traverses through the district frequently show a strikingly sharp boundary between different types of forest, due to the peculiarities of their habitat. In well-drained clay areas the predominating trees are white and black spruce, and balsam; on sandy clay, poplar and birch; on sand areas, jackpine. On rocky hills a mixed forest of these trees and various large shrubs are found. On old burnt areas poplar and birch saplings dominate in the clay areas, jackpine on the sand areas, and in the muskeg stunted black spruce and tamarack are sparsely scattered.—From Memoir 109, of the Dominion Geological Survey, by T. L. Tanton.



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### INTRODUCTION OF PRINTING INTO CANADA.

There are three separate and distinct introductions of the art of printing into Canada, says a recent issue of the Montreal Family Herald and Weekly Star.

They occurred in widely separated fields, and, therefore, served different classes of the population living in different sections of the country.

In point of time, first place is held by the case of Bartholomew Green, son of a man who printed the first newspaper published in North America.

In 1751, Bartholomew Green went from Boston to Halifax, N. S.—both at that time British cities—and set up a printing press in the capital of Nova Scotia, then only two years old.

A few months after his arrival in Halifax Green died, but his place as a printer was taken by John Bushell, who, in March 1752, began to publish the Halifax Gazette, the first newspaper published in territory now forming part of the Dominion of Canada.

The second introduction took place twelve years later, when, in 1764, the firm of Brown & Gilmore of Philadelphia, still a British city, went to Quebec and opened a printing establishment, which produced for the Government the Official Gazette and other official matter, all of which were published in the two languages.

This was only five years after the capture of Quebec, and only a year after the signing of the Treaty of Paris, which finally ceded Canada to the British Crown.

Third to try his hand as a printer in Canada was Fleury Mesplet, who went from Philadelphia to Montreal in 1776 to publish a paper under the auspices of the French-Canadian commission. Mesplet was a protegee of Ben Franklin. The failure of the commission to accomplish its ends left Mesplet in a bad situation, which he endeavored to remedy by publishing books and also a newspaper. His struggles lasted until 1792, when he died, hopelessly insolvent.

### WHAT IT COST TO PRINT A SUNDAY PAPER.

The New York Times gives some interesting figures as to the cost of producing its recent issue when it broke all New York City records by printing 609 columns of advertising. Over 500,000 copies of the edition were distributed to 5,000 cities and towns in the United States, Canada and abroad.

White paper alone cost over \$40,000, ink cost \$2,300, mechanical labor costs exceeded \$5,000 and the cost of printing, omitting the above factors, was \$3,000.

There were incidental printing expenses of more than \$3,000, and cost of transportation, including

postal and express charges, passed the \$5,000 mark.

Without considering the expenditure for news and editorial pay roll, for the business office, and for syndicate and other paid articles, cable news, telegraph tolls and the cost of maintaining the plant, which would add many thousands more, the mechanical cost of producing the issue totalled almost \$60,000.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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 Vancouver, Victoria.



# EDITORIAL

## *THE SAFETY SPECIAL.*

The present issue of the Pulp and Paper Magazine contains the report of the chairman and the papers read before the Pulp and Paper Section at the recent Convention of the National Safety Council in Cleveland, Ohio. During the year just past Mr. A. P. Costigane, Secretary and Engineer for the Ontario Pulp and Paper Makers' Safety Association has served as chairman of this section and for the coming year Mr. G. W. Dickson of the Riordon Pulp & Paper Company will act as Vice-chairman. Mr. Costigane unfortunately was unable to assume the responsibility of chairman for another year. Under his guidance considerable progress has been made in accident prevention, and it can be confidently expected that the good work will go on at even a greater pace as more and more it becomes evident that the movement is of the very greatest importance.

The only concerted effort among paper mills in Canada to arrive at and maintain the best possible conditions as regards health and safety seems to be the Association of Ontario Pulp and Paper Manufacturers. Even this association was not entirely voluntary, although it is practically independent. Its work is immediately associated with the activities of the Workmen's Compensation Board and is to some extent directed and restricted by this body. There is no doubt but what much more effective service would result in an organization with a more extensive membership and with wider powers than simply acting as a sort of go-between for the mills and the Board of a single province. Accidents unfortunately occur in every mill in the Dominion. The Pulp and Paper Association includes most of these mills and deals directly and effectively with many matters of interest to them. Inside the association we find special sections dealing with particular lines such as groundwood, newsprint, etc. There are two general sections each covering a particular field, namely the Woodlands Section which has to do with matters relating to the conservation, utilization and administration of forest lands and the Technical Section which deals with matters of particular interest to engineers and chemists in connection with technical control and improvements in apparatus and process of manufacture.

Neither of these sections, although both are deeply interested in the matter of safety, includes the men most vitally concerned in the matter of safety. The superintendents, foremen, and workmen are those whose work and responsibilities bring them into daily contact with the cut fingers, smashed toes, broken legs

and cases of illness that either prevent a man from reporting for duty or seriously interfere with his ability to do his work. Some mills, probably most mills, have someone whose special duty is to attend to such cases. In the larger plants we find safety engineers and employment departments whose business it is to look after such matters. In smaller plants these misfortunes come directly to the attention of the owner or manager. Everyone who has assumed the responsibility of maintaining production knows what a serious inconvenience to the mill may be caused by an apparently minor mishap.

Most accidents and cases of sickness are admittedly due to preventable causes, such as are described in the pages that follow. To overcome the principal cause of accidents and ill-health, education and co-operation are the most effective means. Education of management and men alike is necessary and co-operation between departments and among all the mills of the industry is also necessary.

It has been stated that almost all of the accidents that occur in the paper industry are fundamentally similar to those which occur in other industries. But even if accidents and even their causes are similar for various industries it still remains the logical procedure for our industry to organize its own safety efforts.

The advantage of being engaged in a common line of work makes it easier to organize and easier to carry out recommendations. There is both the incentive of pride in the accomplishment of one's business as well as the advantage to each member in improving the conditions in his industry. Organization within the industry also has the advantage in the present case of a mother organization, the members of which are already deeply concerned with the matter of safety but have not formed a special branch to deal particularly with this and allied subjects. The arguments for the Safety First Movement cannot be refuted. In fact there are no arguments on the other side. Economic, social, and moral conditions all demand a greater conservation of life and human energy and the Safety First Movement is the most important agency by which this can be accomplished.

The job is too big to be left for an organization covering one province and scattered, though comparatively successful, efforts at various places in other provinces. A Safety and Health Section of the Canadian Pulp & Paper Association is urgently needed. It would result in more efficient administration of compensation laws, would tend to diminish the necessity for such laws, would greatly relieve industry of an unnecessary item

of expense whose amount at present should be the shame of both the workmen and management of Canadian enterprise, and would so greatly increase the efficiency and happiness of the workmen and their families that the cost of organizing and maintaining such a section would be entirely forgotten in the benefits derived.

Provincial divisions or other regional groups of mills could be provided for if advisable and associate secretaries provided. An annual, or more frequent, conference of safety workers would tie the whole movement together. The attendance of delegates at such conventions would stimulate and maintain the interest of the various mills and the selection of a number of delegates from among the foremen and workmen showing the greatest interest in local safety work would not only be an incentive to greater local effort, but would serve as a reward for those who take the most interest in this most important aspect of the daily operation of a pulp or paper mill. The expense of a trip, even across the continent, for an enthusiastic delegate would be incomparably cheap when considered in relation to the effect of enthusiastic and effective safety work in the mill.

One mill does not have every variety of accident nor does any mill have every possible means of preventing accidents and encouraging thoughtfulness and care. Some body, such as a Safety Section, could do a most important work in correlating the many efforts that are being made.

This matter was introduced rather hurriedly at the last meeting of the Pulp & Paper Association and was tabled for further consideration. The year's progress in accident prevention, together with the year's record of injuries, sickness and death, should have furnished sufficient consideration of the matter to warrant the making of definite plans for the formation of such a section at the coming meeting of the Association.

---

#### SOMEBODY IS A QUITTER.

The editor recently saw a copy of the monthly accident record for the pulp and paper mills of Ontario. Complete statistics are given in tabular form. Five mills had perfect records for the month. One mill did not take the trouble to report to the secretary. As each mill is known by a list number there need be no embarrassment. Even the use of the name should not deter a mill from giving the information as used by the secretary. That mill has all the benefits of the Ontario Pulp and Paper Makers' Safety Association, and they are many, yet is either too selfish, too indifferent or too backward to take part in helpful movement.

That is what we call a *quitter*.

---

"The paths of Peace are paved with cobble stones."  
*Columbia Record.*

#### COBWEBS.

If the plan for turning the American railroads over to the railroad brotherhoods materializes will the new railway be called the Plumb Line?

According to the "Daily Mill Stock Reporter," the cuttings from pink corsets, which are so much more attractive to the ladies, are worth  $3\frac{1}{2}$  cents less per pound to paper makers than white ones.

Publications that are usually printed in New York are still suffering from the suspension of work by members of the printing trade. We have missed a number of familiar magazines lately and while extending our sympathy for their difficulties we shall hope to see them again before long. We hope that in the adjustment of the difficulty any irresponsible individuals who have no respect for a contract will get what is coming to them and that the Union leaders who have stood for honorable dealings will be fully supported.

It would seem that the controversy in the United States is really not so much between capital and labor as between the radical and conservative elements in the labor organizations. The action of these radicals in many cases is having an unfortunate effect on the reputation of labor organizations as it discredits the responsibility of such organizations in regard to keeping their contracts. It would seem that remedy would lie in making each member of the labor organization liable for breach of contract which was honorably entered into by the accredited representatives of members.

---

#### CANADIAN PAPER PROPERLY PACKED FOR EXPORT.

The Pulp and Paper Magazine is indebted to Mr. Ellis H. Wilkinson of Toronto for the following story of a consignment of Canadian paper on its interesting adventures. Mr. Wilkinson vouches for the story and states that the waterproof paper mentioned was of Canadian manufacture. This was the tale:

"Much criticism has appeared in the newspapers of late as to the careless methods of packing goods adopted by many of our manufacturers in their export business.

"Here is one striking instance at least which can be cited against this criticism.

"A consignment of over 100 cases from Toronto reached Havana during the recent cyclone. The whole consignment was delivered in good condition, with the exception of one case, in spite of the fact that a large part of the town was flooded and the docks were submerged.

"The interesting feature of the incident is that 14 cases had been given up for lost, owing to the fact that it had been impossible for them to be removed from the docks, and were consequently under water. The consignors were cabled to this effect, but subsequently when these cases were finally opened they revealed a triumph for Canadian packing as they were found, with one exception, to be undamaged, all the cases having been carefully lined with waterproof paper."

# Annual Convention National Safety Council

The Pulp and Paper Magazine this week presents the principal addresses read at the annual convention in Cleveland, Oct. 14, of the National Safety Council (Pulp and Paper Section). Comments, criticisms and suggestions from readers will be welcome and should be sent in as an aid to this good work.

## Chairman's Report, Pulp and Paper Section.

By A. P. Costigane, Secretary Ontario's Pulp and Paper Makers' Safety Association.

Ladies and Gentlemen:

In opening the sessions of the Paper and Pulp Section, it gives me great pleasure to extend to you all on behalf of the National Safety Council, a warm and sincere welcome. To those of you who have attended these conventions during the last two or three years I need say nothing of the benefits to be derived—the fact that you come back is proof of a consciousness on your part that such conventions are of great value. To those of you who are here for the first time we hope that all you see and hear and all that you learn will so enthuse you that you will return home with such a glowing report that the companies you represent will realize they cannot afford to allow any future convention to pass without having a representative present. On behalf of the National Safety Council, it is my privilege to convey to you all a very hearty greeting.

Your chairman during the last twelve months has kept in as close touch as possible with the activities of the section by attending whenever possible meetings of the Executive Committee of the Council. As soon as possible after the Convention last year at St. Louis the chairmen of the various committees were appointed and the detail work of the Section was entered upon with enthusiasm. The chairmen and members of the Committees I desire to thank sincerely for their support and advice and also for the earnest way they have carried on the Committee work. The reports of these committees will be submitted to the meeting later and you will have an opportunity of judging of the extent and excellence of the work done.

There is one aspect of the Accident Prevention work, regarding which I would like to take this opportunity of making a few remarks.

The Paper and Pulp industry of the United States and Canada is one of the largest, wealthiest, and most influential industries of the countries mentioned, and the pulp and paper section of the National Safety Council should, therefore, take a correspondingly important place in the Council. Unfortunately this is not the case. What is the cause of this condition of affairs? Does not the fault lie with us? We are all disciples in this humanitarian movement. Are we individually doing all we can to carry the gospel far and field? We all know of someone in the industry who has not come into the fold. Do we tackle such people in a determined but friendly way, and do not rest content until we have made a convert? Numerous letters have been sent out by the Council in connection with membership drives, with a certain amount of success, but far greater results can be obtained by interested members pointing out

to friends who have not yet become members, the benefits, not only moral, but financial, to be derived therefrom.

If every one of us present today makes a resolution to secure at least one new member during the year, enthusiasm will develop which will soon place the paper and pulp section in the position of importance in the Council which it should occupy.

I am sure the Executive Officers of the Section will have the co-operation and support of every member in bringing to a successful issue our programme for increased membership.

## HOW TO USE DANGER SIGNS IN A PAPER MILL

G. W. Dickson, Riordon Pulp and Paper Company, Hawkesbury, Ontario.

The subject on which I have been asked to prepare a paper admits of treatment from the viewpoint of common sense and observation. Since the signs which we place about our mills should be comprehended at a glance by a person of ordinary intelligence it is necessary that we should consider it from this point of view.

It is customary to introduce a subject by means of a short historical sketch. Observing this time honored custom, let me mention an ancient danger sign referred to in Scripture, and that should be far enough back for historical purposes. The incident I refer to was a banquet, honored by royal patronage, so we read, whereat the danger sign suddenly appeared on the wall. There are two points about that danger sign which might be considered in present day practice. First,—it set the revellers thinking and they worried quite a lot until they found out what it meant. Second—it appeared mysteriously in a good conspicuous place, where everyone was bound to see it. So much for history; the two points as to its application we will consider later.

The Safety Movement recommends safeguarding machinery, etc., but admits that this branch of the subject can only prevent about one third of the usual industrial accidents. Instruction and cooperation of the workers must, therefore, prevent the other two-thirds of the accidents.

There are certain danger points where it is impossible to have a policeman continuously on duty with a club, and it is equally impossible to have a safety inspector on duty 24 hours a day. In such places we must rely on signs, and instead of impressing the instructions with a policeman's club, the sign must be sufficiently striking and conspicuous to attain this end.

In regard to the language in which the sign is written—it is, no doubt, the effort of the people of the North American continent to make English our universal language. However, many foreign workmen are not familiar with it, and it is while they are still new to their surroundings that they are in great danger. In most cases a sign in two languages besides English should be sufficient in any one mill. In our own case in Eastern Canada, and the same is probably true of the New England States, about 90 per cent of those not familiar with English are French. In such localities English and French signs will generally be found sufficient.

To express further the meaning of a danger sign it should embody certain standard colors or designs to express that idea. This plan has been wonderfully perfected in railroad signals, for instance. A switch-light or a semaphore arm describes conditions at its location by means of color, position, pattern or a combination of these, without a single word of explanation being printed upon them. So should our danger signs convey a meaning, even if the observer cannot read, or does not understand the language in which the sign is written. For instance, fire equipment signs might be lettered in white on a bright red ground, danger points indicated by a recognized emblem in red and another emblem referring especially to electrical hazards. For cautionary signs yellow has been largely adopted. Hospital and first aid equipment may be indicated by a green cross. There are certain restrictions as to the use of the red cross, so it is well to be familiar with them before adapting this sign. Ordinary signs or notices giving such information as "Office," "Stores," "Exit," etc., may be carried out in white letters on a blue ground. These sug-

gestions may serve to illustrate the basis on which a system of signs may be built up, and may be amplified to suit the conditions.

By adopting some such standards as these we are but carrying out the same idea as is used in advertising. Many a successful business is built up about a striking design or slogan. It is identified with the product and advertised in every magazine that you pick up. It makes no conscious effect on us when we see it, so we think, but when we need a certain article the advertisement of a certain brand immediately presents itself to our minds. Whatever be the psychology of this, let us apply it to our danger signs. Every day we may pass a red sign lettered in white, "Fire Hose" or "Hydrant." Now if our danger sign system is correct, the first thing you would do when you hear the fire alarm will be to "beat it" for that sign. The color or design of that sign was impressing itself on your sub-conscious mind every time you walked past it. So, I would say keep to standards, have a design or a color or both to express one idea.

There is another class of sign to be considered—the ones placed for the employer's protection. Take two examples, a railroad right-of-way is generally protected at crossings by a "No Trespassing" sign. Or again, there is a sign mounted on a certain machine "It is forbidden to oil this machine or to throw belts on or off while it is in motion." Now there always will be a certain group of venturesome citizens, and they are usually of an energetic disposition, who conclude that these signs are out of date and the methods recommended are too slow. They are willing to take a chance, generally realizing that they are taking the full responsibility on their own shoulders. Unless we are prepared to carry out the above signs to the letter, that is, fine or imprison trespassers on the railroad track, and discharge the man who oils his machine while it is running, might we not better put these signs in more truthful form? We might say "All persons walking on the railroad property do so entirely at their own risk." And the same thing might be addressed to the machine operator—he is doing it entirely at his own risk. He probably knows this when he sees the sign forbidding him oiling the machine while it is running. The question is,—which sign will affect him most directly, to be forbidden to do a thing, or permitted to do it at his own peril. It is to be hoped that the discussion will bring out some opinion on this point.

Another group of danger signs are only displayed at certain times. When a man goes into a boiler for repairs he hangs a "DANGER, Man in Boiler" sign on the steam and blow-off valves. A lineman goes to work on a circuit protecting himself with a "DANGER, Working on Line" sign hung on the open switch. This should be warning enough to fellow-employees of ordinary intelligence, but the protection may be made complete by locking the valve or switch with a padlock and chain.

A handy method of keeping such danger signs ready for immediate use is to have a pocket holding the sign set up at the point in question. When required, the sign is taken from the pocket and hung with a wire loop or hook on the valve-wheel or switch handle. (This was shown by photos.)

When the hazard is great, and absolute security is demanded, as, for example, when men are charging acid towers, it is well, in addition to the danger sign, for the man in charge to lock the switch of the gas fan, and carry the key until the towers are again closed. (A home-made lock was shown as applied to a Gen. Elec. K-20 switch.)

As to the materials used for danger signs—it seldom pays to paint a few words on a piece of tin or on a board. Permanent signs, enamelled on steel plate, are a good investment. They can always be cleaned to look like new, and are more likely to attract attention than a faded, poorly lettered, home-made sign. Makers now carry signs in stock with almost any wording and in almost any language, so that it is seldom necessary to go to the expense of having special signs made up. For electric work the fibre sign is preferable to the enamelled steel sign, as it is not liable to form a short if inadvertently placed across switch terminals.

## SULPHATE AND SULPHITE HAZARDS

Erling Riis, Wausau Sulphate Fibre Company, Mosinee, Wis.

The hazards in the sulphate and sulphite pulp mill are very similar although the principles on which the chemical process is based are exactly the reverse. We will therefore treat them together up to the point where there really is a marked difference where the sulphate and sulphite hazards will be treated separately.

The logical way to treat the subject would be to follow the manufacturing process from the time the logs enter into the pulp yards until the pulp is delivered as a finished product.

The place in the pulp mill that has the most accidents is the yard. This has its reason in the following two factors: First—There is a greater labor turnover in the yard than in the interior plant, consequently you are always employing men with less experience than you do in the rest of the mill, second, even in the best organized pulpwood yard there are certain hazards which it is practically impossible to overcome.

Pulpwood is unloaded from the cars either by cranes or by hand. The pulpwood which comes to the mill loaded on flat cars or gondolas is always held in place by means of car stakes which are wired together. Before the cars can be unloaded these wires have to be cut which always is more or less of a dangerous operation. Of course, patent car stakes have been introduced and are used to a great extent within the mill yards but very seldom used by the railroads. This has its reason not only in the fact that the safety movement has not boosted them sufficiently but also in the fact that the railroads claim they have a tendency to come loose and therefore are very dangerous on long traffic. The cutting of the ordinary stake and the clipping of the wire must therefore be mentioned as a great hazard. (An American mill uses a wire shears on a pole, like a pruning shears, Ed.)

We will not dwell on this subject here as it will be fully covered in the safe practices pamphlet which Mr. Altman will deliver in a few minutes.

If the wood is unloaded by hand it is generally because it has been shipped in box cars where cranes cannot be used. A runway must then be staged from the car to the pile. Men carry the logs and bolts and of course there is danger of stumbling when climbing the pile. In picking up the logs or bolts it is necessary to use hooks. As the work is very monotonous the attention of the workmen is quite frequently divided between their work and conversation. This leads to the two most common causes of accidents in unloading wood in this manner: where the hook, not being securely fastened into the log, slips out; or where the workman while jabbing the hook in the log looks in a different direction and misses his log, the hook flies by it and generally hits him in the left knee or thigh or hits his fellow workman.

Many things have been done and many others suggested to minimize the accidents from these causes but the only suggestion that really has proved of great value is education. Education by direct contact with the men, by publication, by lectures, and last but not least by bulletin boards. The heavier logs, when being unloaded by hand, must be handled by two men, the lighter logs by one man; but whether the log is being carried by one or two men the carriers are always exposed to the danger of stumbling while walking on the log piles. It is general practice to form terraces from the car to the piles most remote from the track so that the piles take the appearance of a stairway from the car and back. The safe practice of course, is to lay the logs perpendicular to the tracks and if 4 or 8-foot lengths are used, there will be vertical air spaces every 4 or 8 feet from the first tier and back. If the men are very careful about piling the logs neatly there will be no danger of a man getting his foot down in these spaces but if the greatest care is not taken, here is a very common cause for a broken leg, or a sprained ankle.

Regardless how strongly you impress upon the man who delivers your pulpwood that you will not accept 4 and 8-foot lengths in the same car, he is apt to ship you wood mixed in this way. As two 4-foot tiers will take up more space than can be covered by the length of one 8-foot log when the wood is mixed in this manner, it is plainly to be seen that here is another great danger for a man to get his foot caught.

If the wood comes in gondolas or on flat cars, it is generally unloaded by a crane. Presupposing that skillful men handle the crane, that the cables are always being watched, break bands kept in good condition, buckets inspected for cracks, etc., the handling of cranes is always a dangerous operation and here as well as with unloading by hand the danger is multiplied when logs of various lengths come in the same car, because a longer log sticking out farther is apt to slip out of the bucket without being noticed by the man on the pile. Many an accident has been caused in this manner.

These same hazards which we have in unloading the wood, we also have in reloading it on cars from the yard. But in the pulpwood yard the car with the safety stake should be used exclusively not only because it is safe but because of the great financial saving effected in unloading the car at the sawmill platform.

Slasher Mill, Beaters and Chippers.

In the sawmill or slashing mill of a sulphate or sulphite factory the hazards were numerous but it is very interesting to see how in later years they have decreased, merely due to the fact that unguarded saws, carriages without railings, etc., are hardly ever to be found any more.



The wood rooms are of the most varied construction. The object of a wood room is always the same, i. e., to remove the bark from the wood and chip the wood into chips of the desired size. The chips are now screened, and screenings re-chipped or conveyed to the boiler room for fuel.

There are three types of barkers: The knife barker which is operated either by hand or machinery, the periodic barking drum, and the continuous barking drum.

The knife barker operated by hand has led to many accidents although they are generally minor accidents such as the cutting off of the tips of fingers. The knife barker has been equipped with an attachment to revolve the logs while the bark is being removed which has minimized this danger and on some barkers is fact entirely removed it.

The continuous barking drum is operated in such a manner that the bolts come into one end of the revolving drum and out of the other. Some bolts, however, will not be completely barked and have to be returned by a special conveyor and re-fed in the drum. The danger of accidents is very small and the accidents generally result in a slight squeeze or bruise. If, however, a man should fall into the barking drum death is almost certain.

The periodic barking drum requires a hopper above the barking drum of a construction similar to a chip bin over a digester. This hopper is filled by means of a conveyor. The hazards here are smaller than with either of the other two methods of barking and as the barking drum stands still at the time it is being filled and is always rather small, seldom more than 8 ft. by 8 ft., the danger if a man should fall into the drum is not very great and the probabilities of falling in the drum are also very small.

The hazards on the chipper are mainly the jumping back of the bolts from the chipper spout. The operator should therefore have an opportunity to stand somewhat on the side of the spout while feeding the chipper. A shield of steel or 2-inch plank hung in front of the chipper in such a manner that it acts as baffle plate for these articles will fully protect the crew in the wood room. Most chippers are belt driven and have tight and loose pulleys or they are belted direct from an individual motor. However, in some mills we find them belted from the main drive shaft of the wood room without tight and loose pulleys so that when knives have to be changed in the chipper the whole wood room has to be shut down. When the disk has to be turned in order to change knives the fly wheel of the steam engine driving the wood room must be turned in similar manner. This is a dangerous practice as there is always a danger of misunderstanding the signals and this has been the cause for many a lost finger or hand. Whichever arrangement a wood room has, there are always a good many conveyors and there have been numerous accidents due to men being caught in conveyors or being hit by bolts falling from the conveyors. These things should always be investigated. The switches, if the conveyors are motor driven, should be easily accessible so that any conveyor can be shut down on a moment's notice.

Where pulp is being made from slabs, it is customary to make the chips by means of a hog. The chute leading from the conveyor into this hog will always have a tendency to clog up. Great care should be taken that the men are instructed never to descend into the chute to unplug this while the hog is in motion. One very great hazard wherever a hog is being used is the danger of the disk exploding, especially where this is made of cast iron without wrought iron bands surrounding it.

#### The Chip Bin.

From the wood room the chips are carried by means of conveyors to the chip bin from which they are put into the digesters. A properly constructed chip bin is not a dangerous place for a man to work. However, the majority of chip bins throughout the country are constructed in such a manner that a man has to go up into the chip bin in order to pick the chips loose to make them slide down into the digesters. There has been a case of a man losing his hold, going with the chips into the digester and being smothered to death. When chip bins are so constructed, steam pipes or compressed air pipes should lead into the chip bin to break down the arches of chips which form while filling the digester. This minimizes the danger to the man.

#### Digesting.

The cooking process is somewhat different in the sulphate and sulphite digester and will therefore be handled separately.

##### 1. Sulphate Cooking.

The sulphate digester is generally a small digester yielding from two to three tons of pulp. It may be a tumbling digester

or stationary. It should always be welded seamless and not riveted as no riveted digester will stand up under the strains of expansion and compression without commencing to leak and as the cooking pressure in the sulphate process generally is very high, 100 to 175 pounds, the liquor will invariably squirt out through the leaks and if anybody is hit by the liquor he will be severely burned. If the leak is very small a fine spray will come from a digester as a fog that can hardly be detected but the fine particles of liquor and steam will be flying around in the air and these particles are very injurious to the eyes.

As the liquor used in a sulphate process does not attack iron to any great extent, the digesters need no lining and do not offer much chance for explosion. Where tumbling digesters are used, the steam line enters the digester through the trunnions. There is then always a danger of this steam line breaking which is one of the greatest hazards in the digester room of a sulphate mill. The operating floor of the digester room should therefore have plenty of exits. If the boiler pressure is higher than the pressure allowed on the digester, a steam reducing valve should be placed on the high pressure steam line where this enters the digester room. There should also be all iron check valves on each branch of this steam line of the digesters and of the main line right behind the steam reducing valve preventing black liquor from backing out of the digester into the steam line and back to the boiler room.

Samples of the pulp have to be taken out of the digesters while this is under full pressure and in most mills this is done in a very primitive manner by blowing the pulp into a barrel or a box with some sacks or old paper mill felt wrapped around it. This seems to be traditional and few mills have been willing to install a cabinet with baffle plates, etc., into which their sample could be blown, overcoming the danger of splashing liquor on the operator and wasting it on the floor. As this substance is very slippery there is always a danger of slipping on a concrete floor full of liquor and if a man falls in it he might be severely burned.

When a sulphate digester is to be blown into a diffuser, a system of signals is generally used between the digester man and the diffuser man so that the latter is aware of the fact that blowing is about to take place and he can take the necessary precautions. The digester man, however, should never blow until he has received the return signal to go ahead. Even with this precaution there is danger that the blow pipe is connected up to a wrong diffuser and the pulp is being blown into the diffuser which is in the process of being emptied with the result that the man on the bottom floor is badly burned.

##### 1. Sulphite Cooking:

In the sulphite process the digesters are generally larger than in a sulphate mill, in fact five to ten times as large. The liquor used in this process releases the gases of sulphur dioxide which are very offensive and choking. The liquor should therefore not be filled into a sulphite digester from the top in the same manner as is used in the case of a sulphate mill but should, after the chips are in the digester, be pumped in from the bottom. Also here samples are taken as in the sulphate digester but with this difference that if the liquor splashes on a man's hand or clothing, it does not affect him. What does affect him however is the strong gas. The greatest danger in the digester room of a sulphite mill is the blowing of a digester. The valve might burst and the man operating the valve will be scalded. Remote control of the digester valve is recommended and where it is absolutely impossible to install this, a strong partition between the valve and the hand wheel of the valve should be installed. This danger is generally recognized by all sulphite men as the greatest danger in the sulphite mill and should be given due consideration by everybody in authority to improve this condition.

##### Wet Machines, Etc.

After the stock has been washed in the blow pipe pits or the diffusers it is handled in the same manner in both the sulphite and sulphate mills either over deckers, wet machines, or dry pulp machines. Pulp from the wet machines or dry pulp machines has to be trucked and as simple as the operation seems to be it is peculiar to note how many accidents occur during trucking. This, however, does not seem to result from any other cause than the fact that truckers very often are young men who have just commenced to work and still like to play and ride the trucks or they overload the trucks so badly that the loads tip over on them. The handling of wet machines must be considered as a rather safe operation while the dry pulp machines offer a few more dangers more similar to those on a slow running paper machine.

We have now covered the manufacture of the pulp throughout, starting with the logs, and will next turn our attention to the manufacture of cooking liquor.

### Liquor Making.

#### 1. Sulphate:

The cooking liquor in the sulphate mill is a mixture of sodium hydroxide, sodium carbonate, and sodium sulphide. The liquor is originally made in the causticizing room where the solution of sodium carbonate is causticized by means of quick lime. In putting the lime in the causticizer there is always danger of splashing and as the liquor besides being highly caustic also is extremely hot, these burns are very disagreeable. A bottle of acetic acid should always be kept on hand for immediate application as this minimizes the danger. (Men have been known to fall into the causticizing tanks.)

The handling of lime is an exceptionally disagreeable job especially in hot weather and the lime bin should be well ventilated and the dust sucked right out. Even at that the lime dust in itself will always attack a man's skin. The men should therefore be instructed to have their jackets buttoned tightly around their waists, a muffler around their neck, and wear muzzles.

After the lime sludge has settled to the bottom of the causticizer, the clear liquor is drawn off by means of a siphon pipe and used directly in the digester.

The sulphate mills always recover their liquor. The process which takes place in the recovery is primarily a process of evaporation, secondarily, purification and in the third place, dissolving.

The first step of evaporation is with a vacuum evaporator such as the Swenson, Scott, or Wehre evaporators with multiple effects. These evaporators have been known to explode and burn the operators severely. This is, however, something which happens very rarely. The main danger in the evaporator room of a sulphate mill is from the escaping gasses which have a tendency to injure the eyes. The sulphate men have never succeeded entirely in overcoming this danger but have in later years reduced it to a minimum by piping all condensed water into enclosed sewers outdoors. From vacuum evaporators the liquor passes to the disc evaporator which is nothing but a big pan in which are revolving large steel disc plates. The whole thing is entirely enclosed and really offers no danger to anybody.

From the disc evaporator the liquor runs into the rotary furnace. The dangers in the rotary furnace are the forming of rings of black ash within the rotary, stopping the liquor from getting towards the front end while the heat from the smelting furnaces will have a tendency to ignite and melt the black ash which is in this end. When ultimately a ring breaks and the liquor runs into the molten soda ash in the rotary explosions are very apt to happen. When the liquor has passed through the rotary furnace it falls out on the floor in a dry state as black ash and the process of evaporation is completed. This black ash contains the sodium salts from the cooking liquor with the lignin from the wood. This with salt cake is shoveled into the smelting furnace where, upon being ignited the lignin will burn and smelt the sodium salts which, purified, will drop in molten form as so-called melt down into the dissolving tanks where it is dissolved and pumped into the causticizer room.

There are certain trade hazards connected with a smelting furnace. These are blast furnaces and the blast pipes have water cooled nozzles. At times these nozzles burn out and the water will run into the melt and cause terrific explosions. Furthermore, these smelting furnaces at times have a tendency to clog up at the bottom so that all the melt which is being made in the furnace does not run out but accumulates. If the operator does not detect this immediately a good deal of melt will have a chance to accumulate before he gets a chance to run a steel rod in through the opening and unplug same. When he does this the melt will run out with terrific force and in striking the solution of liquor in the dissolving tank, there will be minor explosions with sparks flying in all directions. It is then up to the man to be on the lookout so that he can get out of the way before the melt has had time to reach the tank. It appears plainly that the main thing is to have well-trained and experienced men to do this work. It is also recommended that in each soda recovery room there should only be one man designated to handle the water valves for the blow nozzles so that these never run dry and give chances for explosions.

#### 2. Sulphite:

In the sulphite mills the cooking liquor is very seldom totally recovered but new liquor is always being made. Cooking liquor is here calcium bisulphite. Some mills use pyrites but the most commonly used is sulphur. This is burned in sulphur ovens, either stationary or rotary, to sulphur dioxide gas. With the drafts properly manipulated there is very little chance of any gas here escaping so the dangers are very small indeed. This gas passes through a cooling plant. During

the operation of this cooling plant there is very little danger of accidents happening to the men due to the nature of the process. When the plant is shut down, however, and the cooling system has to be cleaned the gasses really are very strong and men have been known to be overcome. These gasses pass through high towers filled with limestone meeting a stream of water or weak acid which absorb the gasses making the acid. The sulphite mill operated by the tower system must have at least two towers, a weak and a strong liquor tower. The strong liquor tower must be tightly sealed at the top while the weak liquor tower may be left open at the top as long as there is a steam jet to take care of the SO<sub>2</sub> and CO<sub>2</sub> gasses, this tower being filled with limestone. The greatest danger here is that in unsealing a tower for filling it with limestone, a man might make a mistake of unsealing the strong liquor tower which will expose him to the danger of being overcome by gas. As these towers are very high and limestone has to be carried to the top, they are always equipped with an elevator. These should always be furnished with a locking device so that nobody can lower the elevator while the operator is on top.

When the acid has been made in the towers it is generally weak, a test of approximately 3 to 3½ per cent. It is, however, before being used in the digesters, strengthened in a series of tanks by means of the gas-relief coming from the digesters. Here as through the rest of the acid plant there is really only one danger and that is the escaping of gas.

## UNSAFE PRACTICES IN PAPER MILLS— THEIR COST IN MONEY AND MEN

H. H. Matthieson, Safety Director, Crown Willamette Paper Company, Portland, Ore.

Unsafe practices or, if you please, "sins" against safety and common sense, are quite as prevalent in pulp and paper mills as in any other branch of the industry and, perhaps due to the varied and peculiar conditions under which these operations are carried on certain of these practices are even more prevalent in our industry than in any other. In considering this subject, one's mind begins to enumerate a list of forbidden unsafe practices, with which we are all quite familiar and against which we are all continually combatting. Such unsafe practices, for the most part, produce 80 per cent of the accidents with which the industry is charged.

In passing, however, permit me to mention a few common, every-day, unsafe practices which are continually coming to our attention, and more particularly prevalent in the Paper Industry, such, for example, as the wearing of loose, ragged clothing while working around machinery; not using safety-goggles or leaving them out of place; poor house-keeping; horseplay and scuffling; throwing pulp balls; burrowing "tunnels" in wood piles; not wearing goggles while doing work which is dangerous to the eyes; dropping wood or other materials on the hands or feet. In studying these several unsafe practices, let us re-classify them, listing them, if you please, under some physical or mental condition of the individual himself—such as "Thoughtlessness," "Inattention," "Indifference," "Ignorance," and "Chance-taking,"—and to ascertain, if possible, what may be done through safety training or other means, really to reach the individual workman and, by neutralizing or eradicating these causes, get at the root of our accidents and thus eliminate them. These "sins" against safety and common-sense are the underlying elements of all unsafe practices, and unsafe practices are the primary cause of accidents.

You will note, in passing, that in the various causes listed above, I have omitted the term "Carelessness." This was intentional. I do not like the word "Carelessness" as so often applied to the causes of accidents because of its misuse. It so easily covers such a wide field that we are all apt to use it inadvertently, and the mere statement that "Carelessness" is the cause of a certain accident covers the whole field, leaving no further investigation or inquiry necessary. The mere fact that a man is "Careless" closes the chapter. Carelessness is merely an excuse, or rather a very handy way of shifting responsibility. I fear that this word is too freely used and that, were it not so commonly used, and a little more effort and thought put toward carefully investigating the real causes of accidents, we might discover more ways and means of avoiding many of the accidents which we now have. A thorough investigation will often reveal some other cause than "Carelessness" and often one which will suggest a remedy. The word "Carelessness" should be used with greater caution and reserve than is commonly done.

With your kind permission, let us now endeavor to develop this subject in a broader and more comprehensive sense,—to cover, in a more general way, some of the unsafe practices occurring in industry as a whole,—and discover, if pos-

sible, some efficient, effective, and practical methods of dealing with these unsafe practices and causes of accidents, with a view to making them so unpopular as to reduce their frequency and thus reduce our accidents to a minimum. We will thus divert our attention somewhat and study this subject of unsafe practices from the angle of complete elimination thereof through safety training.

Let us first assume, therefore, an ideal condition in our plants all over the country; that is, a complete practical safeguarding of all dangerous parts and machinery. In fact, safety work, in so far as safeguards are concerned, because of the passage of the various state laws, because of regulations laid down by insurance companies, and because of public sentiment, the safeguarding of dangerous parts has been so featured that now the unguarded plant is becoming the exception rather than the rule, and everybody, everywhere, is demanding safe working places and safe working conditions. The problem, then, of really getting results in accident-prevention work, has shifted from the safeguarding problem to that problem sometimes called "Human Engineering," which tends to enlist the interest, help, and cooperation of the individual workman, his family, and the whole community by installing into their lives and make-up what is known as the "Safety Spirit."

#### Develop Public Safety Spirit.

The Spirit of Safety must become popularized and be made a public proposition. The Safety Spirit should be so propagated that the Public as a whole, will know it, believe in it, and consider it in the same way and the same class as they consider the Red Cross, Pure Milk, Public Health, or any other necessary proposition. Safety must be made a part of the public make-up and so thoroughly known and believed in as to be a part of every man's, woman's, and child's inner life. This, to my mind, is the Safety Man's mission; it is his opportunity; it is 50 per cent of the battle of really getting results and eliminating accidents.

The question then arises: how to develop this Safety Spirit and how actually to sell it to the workmen and the people at large.

Much has been written and much study given to the subject of how to sell safety to the management, to the superintendent, and to the foreman,—but, how about the workman? He, too, has an individuality and must be sold too, for he, after all, is the man we really have to reach.

Do not misunderstand me—that I am under-estimating the necessity of selling safety to the "big boss"; such is not the case, but I often feel that many of us think, when this is done, the whole problem is solved. Gaining the backing and cooperation of higher-ups is only the first important stepping stone. There is an old saying "You can lead a horse to the water but you cannot make him drink unless he wants to" and it sometimes appears that we are trying to make the workman "take" this safety propaganda whether he wants to or not. He has an individuality; he must be "sold" Safety, just the same as any one else.

The Safety Committee is recognized by all, as the very best means of enlivening this interest in the workman. It is a well-known fact in the political world that in order to get one's interest in a political proposition, you must give him something to do; therefore the practical politician arranges to enlist the services of as many voters as possible by placing them on committees and giving them a part to perform. The workmen likewise should be given something to do in the safety world. He does not want this Safety Spirit forced upon him from "above." He wants to be a part of it; he wants to help prevent accidents in his plant and community; he wants to consider it his business, too.

Do not try to sell safety to your man as a charity or welfare proposition, nor to make it appear wholly for his individual benefit. Aside from the humanitarian standpoint there is also a commercial and patriotic standpoint to Safety. He is aware of this fact just as well as you are, so do not try to deceive him; be frank and truthful with him. He appreciates frankness and only in this way can you gain his confidence and get his loyal support.

We must extend this work even beyond the Safety Committees and endeavor, through personal contact and personal interest, through the foreman, through the plant publications, through safety motion pictures, through bulletins, through daily messages on a conspicuous blackboard, and through the schools, the churches, the newspapers and local ordinances, to get this man, his wife, and his children, to consider the safety ideas as an integral part of their lives and to consider it as such, rather than a mere necessity or philosophy which is forced upon him by the foreman or by the Company for which he is working.

I sometimes think that we have been trying to bombard the workman's position with reference to safety for so long a time,

along the same lines and methods, that a change of attack and new ideas and new methods are necessary now to make greater progress. More attention must be given to developing safety as a community proposition as outlined above and in the endeavor to interest the individual citizen, his children, his wife, and the whole family in habits of safety practices. Safety is everybody's problem; it is everybody's business.

#### Cost of Accidents—In Men.

Aside from considering the humanitarian side of accident prevention work, that is, the pain, suffering, and misery caused thereby, accidents are an economic and commercial loss, not alone to the individual and to industry, but also, to the nation. The great war has taught us that the man-power of a nation is, without doubt, the greatest asset it has, and anything which tends to deplete or undermine a nation's man power is striking at the very heart of that Nation. Unsafe practices and their resulting accidents are annually injuring, maiming, and killing thousands of our people. Accident prevention activities then, become a patriotic proposition which can best be demonstrated by the following statistics:

During the great war just closed, the United States' fatality loss in France amounted to 56,227 men killed. During these same nineteen months, while we were engaged in war, back here at home, many miles away from the bloody conflict something over 126,000 men, women, and children met violent deaths in the United States because of accidents; that is on an average, 220 accidental deaths every day for the nineteen months we were in the war, nearly two and a half times as many people killed by accidents as by war.

During these same nineteen months, over 200,000 of our soldiers were injured or wounded in battle. At the same time at home over 2,000,000 of our people were injured by accidents (though not fatally) but so badly injured that they were disabled for four weeks or longer; ten times as many injured at home by accident as were disabled by the war. This, Gentlemen, is the cost of unsafe practices and their resultant accidents in man-power of this country of ours. This is a loss which I am positive that systematic, thorough safety work can reduce many fold, in fact, some of the most optimistic of us believe it can be reduced thereby over 75 per cent as approximately this proportion of our accidents are directly traceable to unsafe practices and acts in our every-day life.

An accident should be considered as a terrible calamity, and we should learn to look at unsafe practices and their resultant accidents as one of the Nation's great curses, and to endeavor to imprint in our minds and on the minds of the people of this Nation, the awfulness of the crime of "Carelessness."

#### The Cost of Accidents—In Money.

In addition to the great cost of accidents in man-power, accidents also cost money. This is the commercial side of safety. I once had occasion, in a plant where I was employed, to ascertain the average cost of each time-lost accident occurring in that plant. From the records we ascertained the number of accidents occurring over a certain period of time, comprising all classes of accidents, including fatalities; we first compiled the compensation payments, funeral expenses, and other expenses connected with these accidents (not including the medical cost nor the loss of wages). We allowed an estimated cost of \$30.00 per man for replacing the injured men with new men, which, by the way, is a very conservative estimate; compiling these figures, we found that 292 accidents covering this period, cost our industry \$46,758.35, or an average of \$160.14 for each and every lost-time accident occurring during that period. This was the average cost per lost-time accident to the industry only; in addition to this, we estimated a total loss of \$22,708.00 in wages lost, because of these 292 accidents, over and above what the compensation of that State allowed for such injuries, and a like amount for the medical care of these 292 injured men. Taking the sum total of all these items into consideration, the cost of these 292 accidents amounted to \$92,174.35 or an average total cost of each accident, amounting to \$315.66. This sum, Gentlemen, was the average total cost of each lost-time accident to that particular industry and the community at large. These figures may perhaps vary somewhat for the various industries, the various state laws, and the particular experience of each individual industry, but when the cost of your accidents is calculated on this basis, the figures will astound you.

Taking, for example, the above average cost as the cost of each disabling accident, to Society and to Industry, and considering the millions of accidents which occur in the United States every year, the greater majority of which might be eliminated by proper safety training; the wastage, the total cost and the loss occasioned thereby, if saved, would retire our National debt in a comparatively short time.

I may have wandered somewhat from my original subject, but when we stop to consider that the unsafe practices enumerated above are, in a measure, the cause of 80 per cent of this outlay of human life and enormous cost in men and in money, we realize perhaps more than ever before, the great opportunity which is afforded us in endeavoring to spread the Safety Spirit to all thus not only performing a humanitarian duty but a patriotic and an economic one as well. Safety should be handled just as we handle the production end of industry,—as a good second business proposition. It should be given a dignified place as an indispensable part of an efficient organization. Do this and we will succeed; go at it half-heartedly and we will fail.

As a result of these efforts,—namely, to make Safety a by-word of every man, woman, and child in the Nation, permit me to paint before you a picture in words, showing the contrast between the old conditions of a few years ago, the "Plant of Yesterday," and the new ideals of the future, the "Plant of Tomorrow":

In the Plant of Yesterday, there was little or no thought given to accident prevention work; safety ideas were ridiculed and considered lightly, as a joke, or passed by with scorn. Unsafe practices and chance-taking were prevalent and quite permissible,—passed by with a shrug of the shoulders—and accidents were considered a necessity to industry and to production. Men were killed, maimed and injured, for lack of proper safeguards and proper safety training. We seemed to be in the business of producing widows, orphans, cripples, and suffering. The ambulance was a frequent visitor at the front gate to haul away the poor unfortunates whose broken bodies in many cases were cast out on the scrap heap of humanity as a by-product of industry.

But a new era has dawned on the horizon; some one had a vision that accidents were unnecessary to production, that they were a humanitarian and an economic waste, and that they could be entirely eliminated by proper safeguards and safety training,—a vision which was put into practical effect; thus, the Plant of Yesterday fades into the Plant of Tomorrow;

In the Plant of Tomorrow we shall know nothing of industrial accidents, for every plant will be completely and practically safeguarded; unsafe practices, chance-taking, and carelessness become so unpopular as to be looked upon with scorn by all and be considered as criminal acts, every person in industry, from the President to the humblest employee, will be imbued with the Safety Spirit, and safe practices, safe thoughts, and safe acts will have become a habit with all, and all will have come to believe that the safety way of performing work is the best way. In this plant, through frequent Safety Committee meetings, the employer and the employee will "get together" and become acquainted with each other and find that each is human, that each is "his brother's keeper," and that each is not such a bad fellow after all, and all working together, hand in hand, will ultimately win the battle for Industrial Democracy.

That, Gentlemen, is our opportunity; that, is the ultimate goal of Safety.

## HOW TO MAKE SAFETY MEETINGS INTERESTING

S. F. Shattuck, Kimberly-Clark Company, Neenah, Wis.

This subject, regardless of the form of safety organization employed, is vital to an enthusiastic and successful safety program. A dead or uninteresting safety meeting sends a thinking man back to his work with a case of brain fog and such a mental attitude tends to anything but safety.

At the present time, in our organization, we are varying our safety program by the abandonment of the usual type of safety committee and centering all responsibility on the foreman of each shift or department. This plan contemplates periodic meetings of foremen instead of the former elected or appointed safety committee. It was at a meeting of foremen that this plan was suggested and evolved. The sentiment was strongly voiced that the safety of a department is "up to" the foreman, and our comparative results since July 15, when this new order of things went into effect, have abundantly justified the change.

This incident and its results point the way to the secret of interest in safety or safety meetings. Our foremen have taken the initiative, have assumed a responsibility, and are now proving up by lowering a previous record. Pride in, and record of achievement are vital factors in maintaining interest in safety meetings or any safety program.

Along with this must go a system for providing each foreman with his record of achievement in comparison with other foremen. We have hit upon the simple psychology of giving

each foreman each week a record of man-days elapsed since the last accident within his jurisdiction. In addition this record goes onto the desk of every officer of the company and proper publicity is given to this fact. The reaction on both sides is wholesome and the effect upon the safety record has been the constant widening of clean spots.

The sporting element is also a valuable factor if properly utilized. We have pulled off almost every conceivable form of safety contest between our several mills and departments and the relative standings are, of course, features of the Safety Meetings.

To bring before a safety meeting all possible new safety ideas in tangible form helps to fix interest. For instance, when one of our mechanics developed a foot brake for two-wheeled trucks, we had this device demonstrated, prior to adoption, before several of our Safety Committees. For years, in paper and pulp mills, men have stumbled over the handles of four-wheeled trucks. Recently, one of our men invented a handle that, as soon as it touches the floor, will spring back to an upright position. This idea was demonstrated before the plant Safety Committee and is now under observation.

A campaign for clean toilets, elimination of horse play, and new schemes for advertising the Safety Program have their logical inception and periodic boosts in meetings of Safety Committees.

We have tried the idea of inviting injured men to meet with a plant Safety Committee. If these men are treated with just the right tact and consideration, this practice is good and lends a genuine interest to the meeting. Much depends upon the attitude and personality of the chairmen. If the injured man can be placed at his ease and robbed of the embarrassment which may well attend an invitation, which amounts to a summons, to appear before the Committee, much good may result through getting the first-hand views of the injured man, and causing him to feel that his misfortune is being used to a constructive end. But if such meetings are conducted along inquisitorial lines, the sooner this feature is dropped the better for the good of all concerned.

For some years we have had, as the executive centre of our Safety Program, a monthly or quarterly meeting of department heads—men whose chief concern is production. The source of sustained interest in such a group, granting that all are well sold on the Safety proposition, is definite responsibility. Recommendations of the Safety Director are here brought for approval or disapproval. If approved, responsibility for execution is placed and the accounting is subsequently called for. Interest with men of this type is the kind of interest that obtains in the carrying forward of any necessary or important phase of manufacture. Furthermore, the steady backing of such a group may be counted upon provide the Safety Director conducts his program in a sane, co-operative spirit.

In our Company we hold annually a Safety Mass Meeting to which wives and sweethearts are welcome, and nothing is left undone to make them "regular" events. Advance advertising, free transportation, admission by ticket, and plenty of delegated responsibility are the advance agents of an interesting meeting. Such meetings, staged on right lines, may do much to develop a family feeling through an organization and it is this feeling that industry is so sadly in need of these days.

For the "family reunion" of our Fox River Valley mills this year, we secured the new chapel of Lawrence College, seating approximately 1,800 people. This auditorium contains a magnificent pipe organ and we engaged the services of the best organist in the state for an organ recital to precede our regular program. Then followed a community sing, which was a joy forever. The volume and quality of the singing was the surprise of the meeting. Most folks like to sing when they are not embarrassed by the sound of their own voices and few influences weld a large body of people into one-ness of feeling like song, properly conducted and heartily entered into.

A simple and impressive feature of our program was an idea, presumably borrowed, as are most of our good ideas from some good friend in the Safety game, namely, "A Procession of the Blind Man and his Friends." A blind man is led onto the stage by a little child; behind him follow at intervals a dozen varieties of cripples. When all have reached the far end of the stage, they turn their backs to the audience and upon the back of each cripple is a placard, "I was careless"—"I didn't think"—"I forgot"—"I didn't know it was loaded", etc. Any Safety Committee can readily find willing "victims" for such a stunt and a point of contact with an industrial audience is instantly established. We have always tried on these occasions to have one or more addresses by men capable of getting home with their messages. The homelier and the more simple the mode of address, the better.

Thus far, the movie has closed every program, and even though everybody is now well "fed up" on movies, a good

Safety film never fails to hold its own. At such Mass Meetings, any new phase of the Safety Program or anything akin to it may be touched upon with good grace. For instance, when dentistry was about to be instituted in our mills, we took occasion to give one of our company dentists a peace on the program and there is little question that the smoothness and enthusiasm with which this service moved off had its roots in the favorable impression given at the Safety Meeting.

Our Mass Meetings are invariably held on a Sunday afternoon, a proper time for such a gathering. It has also seemed to us appropriate to invite a local pastor or priest to open the session with prayer.

To summarize, I would say that our experience has made clear seven factors making for sustained interest in safety meetings:

1. Develop a personal and group pride and initiative.
2. Provide foremen and groups with comparative records of accomplishment.
3. Utilize the sporting element.
4. Bring into the meeting as much tangible illustrative material as possible.
5. Make the committees development centers for new ideas.
6. Conduct meetings in a business-like manner and localize responsibility.
7. Occasionally inject the inspirational element to maintain the tone of the organization.

## POSTER TOPICS ON SAFETY

Al Kroes, Safety Engineer, Employers' Mutual Liability Insurance Company, of Wausau, Wis.

I am exceedingly glad of this opportunity to discuss with you the important subject of safety. Of course, the very best I can do in the time allotted, is to handle this on the skip-stop plan. Indeed I can only present to you in part the method used by our Company to get close to the men, and I may say at the outset that I never lacked an audience or never failed to get the strictest attention. And while these words are not directed to you, it is still possible to pick up a seed here and there which I hope you may take home with you and plant in some fertile corner of your mill.

Gatherings of this kind are and always have been the national stepping stones on the stream of safety and the National Safety Council deserves great praise for their policy of engineering these better every year. What can do more for all-round efficiency than for a number of paper-mill superintendents of different states, to come together in brotherly fashion and exchange ideas on their chosen profession? The younger men are rubbing elbows with the veterans, gaining valuable knowledge, and the older fellow gets some up-to-the-minute stuff from the newly appointed, and from that crucible the real facts come to all of you.

I am intensely interested in this work of reducing the horrible toll of accidents everywhere throughout our beloved country. For some years back I have come to the conclusion, that after all is said and done, the most important cog in the whole safety movement is "to get close to the men." Now these six words and what they imply seem simple enough, but mind you, they constitute "some job," big enough and worthy enough for the best man in your midst.

Speaking to men of qualified leadership, men of authority, I came here to tell you, that to get close to the men is distinctly your job. Furthermore, the responsibility of accidents in your mill is yours. Don't try to shift the burden, don't pass the buck. It's yours, and without your cooperation the safety movement becomes a dead issue.

Army officers are held to strict accountability for the safety of their men; a captain of a ship feels responsible for the comfort and lives entrusted to his care; a railroad engineer with keen eye is watching the signals by day or in the dead of night. He feels keenly that upon him depend the lives of his passengers and crew. Why, then, my friends, should a superintendent neglect his men and their comfort, not to mention the resulting horror of a home destroyed.

That, my friends, is the heritage of being a leader of men; and this splendid Congress is to be congratulated, for including in their various discussions the great worth-while subject of safety in paper mills, in separate sessions.

Superintendents or safety engineers must be safety enthusiasts and I am sure they will be, if they tackle this safety movement from the right angle.

In the first place we must overcome the superstition of the workmen (some of them) and change these men into enthusiastic believers in safety. Perhaps you will say that your men are not superstitious. Let us see.

You, as superintendents, have undoubtedly heard some of your workmen say, that accidents are inevitable. I recall a visit to a hospital where a pious old fellow was taken to have

his leg amputated. Almost the first thing he said to me—"It was God's will." When I came to the shop where the accident occurred, to look into the cause of this horrible thing, a fellow workman said, "Well that's the way 'them' accidents go, some day I'm going to get mine." These men must be taught to forget these old time-worn Fifteenth Century ideas.

The right knowledge of safety first, ever, and again repeated will free their minds from darkness, superstition and fear.

A Chinaman when he builds a house puts this sign (Mr. Kroes showed a card) on the ridge pole. He implicitly believes that when that sign is there no workman on that job will meet with an accident. Well but you'll say that's a Chinaman. Wait a minute—William McAdoo when he was the big railroad boss, wrote in one of the journals, that in the American railways there are hundreds and hundreds of brakemen each carrying in his pocket a big fuzzy rabbit's foot. This must be taken from a grey rabbit, shot by a nigger in a cemetery and in the light of the moon, and if it is such, and he carries it on his person there is no chance of an accident for him. Thing of it—superstition is still abroad in our land in this, the Twentieth Century.

To overcome that sort of thing you men, as the shepherds of your flock, must begin to realize that this is the Hindenburg line of accident prevention. Your best efforts are needed to stir your men to action and if you have that fine diplomacy that gets close to the work, the battle is half won. Enthusiasm must replace superstition and all this can be done by teaching the man to pay attention—sustained attention. Don't get the idea, that a flurry now and then will be about enough. Sustained attention,—a regularly mapped out safety campaign full of pep, interest, variety. Don't dish up the same old sermon every week. What would you think of a minister preaching the same sermon every Sunday? Would you continue to go to church? In my travels I came to a shop recently where the Bulletin Board was adorned with three old posters, one of them half turned down. A big spider had woven his web in front of them and was extremely busy catching his dinner.

Safety Posters and cobwebs don't mix at all. Well located bulletin boards are doing fine work but only when kept clean and alive with new material.

Gentlemen:—There is only one way. You must take hold of the wheel yourself and while it is true that there are lots of breakers ahead, a good skipper sticks to the wheel and the ship will weather the storm. Another thing—if your manifold duties make it imperative to give the wheel to some one else, be sure that you pick a good mate. A man who is capable and willing to carry out your policies, a man who understands the human factor and is himself a strong believer in safety work.

Paper-mill accidents are about the same as you find in any other shop. Of course, there are a few special hazards directly connected with the paper industry, but you look over the list of say a hundred or more paper-mill accidents and you are at once convinced that the problem in your mill can be reached by the same cleaning process applied in other shops.

Systematic Organized Accident Prevention will put your shop in a new atmosphere. Safety First just means good house-keeping. Don't you think your workroom could stand the once-over? It is hardly possible that your machine room is entirely perfect. Would it not be well to take a good look at the digester room or the acid plant?

It has done wonders in the mill of your neighbors. Some of them started with a bit of suspicion but finished with a smile. Put sunlight into your safety campaign and you will soon find out that the warm rays of that safety sun will play on the thermometer of production; and this is all important, as the high curve of production will be closely watched by the man in the "inner sanctum."

Safety First and production are Siamese Twins. They are very closely related. It would not be possible for me to take up all phases of this great question. Of course, you will meet some fellows who are unbelievers, the fellows who can't see the use of safeguards because he never did bother with these new-fangled things. Tell this man, that because his grandfather never had a bath-tub is no reason he shouldn't have one. This old world is moving. The first fellow only flew 30 feet in an airship and then broke his neck. Now they go 4,000 miles in 70 hours and the only thing they break is a record.

Finally you will spell the word "HOME", the finest and best word in the English language.

My friends, every ounce of effort you put into this safety movement is adding happiness to the home of your fellow workers. For every man with red blood and a normal heart-beat, will do the safe thing for home and mother and for the kiddies who are waiting by the gate to welcome Daddy, when the day's work is done.

And right there, my friends, you are reaping your reward. All of you curse the accident after it happens. I know that your heart is in the right place like the engineer on the speeding train and the captain of the great ocean liner you will feel the great responsibility in caring for the men in your charge.

And in conclusion I will say that I am not blind to the shortcomings of these workmen—In the daily panorama of shop life the utter indifference to safety of most of them is amazing. But still, deep in men's hearts lies the desire to do right. To awaken that spirit and steer it in the channels of safety is your, almost sacred, duty.

### EXPRESS PACKAGES MUST BE EXPRESSLY PACKED.

New express packing rules, similar to those required for freight movement on the railroads, will go into effect on December 10, and express shippers are requested to prepare themselves for the new standards. The new packing requirements, which were recently approved by the United States Railroad Administration, were formulated to provide additional safeguards for merchandise sent by express. Heretofore, shippers have been using all sorts of containers for express packages, but the new rules are expected to make the regulations uniform and thus provide business concerns with an even more reliable and speedy service.

Preparations are being made at local offices of the American Railway Express Company, which is the agent of the Government in handling the express business of the entire country, to put the new rules into effect on December 10, and to require a strict adherence to them thereafter. The express officials expect that in this way shippers will be induced to pay greater attention to their packing methods and to turn their business over to the carrier substantially packed and clearly marked, so that, with reasonable care on the part of expressmen, all traffic can be handled rapidly and with fewer chances of loss or damage in transit.

The rules, recently promulgated, will not permit the use of paper wrapping for packages over 25 pounds, nor ordinary paper boxes, wrapped or unwrapped, when the weight of the package is over that limit. For shipments over 25 pounds, wooden containers, or containers of fibreboard, pulpboard or corrugated strawboard material are required. The cartons must be made of materials of specified "test strengths," similar to those required for the freight service, and the containers must bear the stamp of the manufacturers certifying that the material used is of strength required for the weight of the shipment carried in it, as called for in the rules.

The express regulations, though modelled on those for freight movement, permit a wider latitude in the size of the carton used, and carry a certain number of exceptions. Shippers who wish to acquaint themselves with the new express regulations are requested to study Supplement No. 5 to Express Classification No. 26, in which these rules are embodied, and copies of which may be secured at any express office. It is calculated that the time remaining before December 10 will be sufficient to enable express shippers to adjust themselves to the new packing standards.

### ROMANTIC JOURNEY OF B.C. SPRUCE.

The following is from the Prince Rupert News:—"A year ago some Prince Rupert people were getting out logs at the Queen Charlotte Islands for the Imperial Munitions Board. The work was ended late in the autumn and the spruce logs were sold to the paper mills at Ocean Falls and ground into pulp, rolled into

paper and shipped back to this port en route to New York City to print that great American paper, the New York Times. A train load of the paper went out yesterday eastbound.

"Very soon the same paper will return here printed, and will be sold on the streets. Some of those who read the paper will be the same who got out the logs at the islands and possibly the same that handled the paper when it returned through this port. Few of them, however, will remember, when they read the paper, that it was their effort which felled the monster spruce trees from which it is made.

"New York is over 3,000 miles from this port. The romance of the spruce tree is one illustration of how exceedingly small the world is becoming."

### STARTING UP OF BEAVER COVE PLANT DELAYED.

Owing to shortage of fuel supply and delay in securing machinery the plant of the Beaver Cove Lumber and Pulp Co., Ltd., will be unable to start before the first of November.

Mr. King, the treasurer of the company, is at the plant and Mr. Pratt, the secretary, is again in Vancouver after a trip to California.

### FORESTRY STUDENTS AT TORONTO.

One of the serious handicaps to progress in forestry in Canada has been the lack of trained foresters. This was partly due to the comparative newness of the profession in Canada and partly to the lack of accommodation in our colleges. It is gratifying as well as interesting to note that the Department of Forestry at the University of Toronto this year has the second largest registration in the history of the school and the percent since the beginning of the war. It may be that the publicity given to the importance of forestry in connection with the war has had something to do with the present state of affairs. In the first year there are 21 students, second year 13, third year 8, 4th year 2. In addition to these there are one in the fifth and sixth years forestry and arts course besides one special student and one occasional student. This makes a total of 48 which is gratifying not only to the faculty of forestry but to the wood using industries of the Dominion.

### PULP AND PAPER ASSOCIATION'S NEW QUARTERS.

For some time past it has been realized that the location of the offices of the Canadian Pulp and Paper Association are not altogether conducive to a complete use of the facilities provided. The majority of the members are out of town and it is not always convenient for them to come to the down town district.

On this matter being placed before the Executive it was unanimously decided that the offices of the Association should be moved to the Drummond Building, at the corner of Peel and St. Catherine Streets, Montreal, and the Secretary was accordingly instructed to make the necessary arrangements. It should therefore be noted that on and after the 1st of November 701-2 Drummond Building will be the new home of the Canadian Pulp and Paper Association.

This building is within three minutes' walk of the railways and principal hotels uptown, and it is sincerely hoped that all the members of the Association when visiting Montreal will make their headquarters at the new address.

**PAPER MILL STOCKS DECREASED.**

Comparing the stocks on hand at the domestic mills on September 30th with their average daily production based upon the weekly and monthly reports for the 12-months' period ended March 31, 1919, the figures show that:

Newsprint mill stocks equal slightly more than 4 days' average output.

Book paper mill stocks equal slightly more than 10 days' average output.

Paperboard mill stocks equal slightly more than 8 days' average output.

Wrapping paper mill stocks equal slightly more than 18 days' average output.

Bag paper mill stocks equal slightly less than 8 days' average output.

Fine paper mill stocks equal slightly less than 28 days' average output.

Tissue paper mill stocks equal slightly less than 15 days' average output.

Hanging paper mill stocks equal slightly more than 21 days' average output.

Felts and building paper mill stocks equal slightly more than 10 days' average output.

Miscellaneous paper mill stocks equal slightly more than 35 days' average output.

Total paper mill stocks of all grades equal slightly more than 11 days' average output.

Mill stocks of bag papers, felts and building and specialties increased slightly during the month. Stocks of all other grades decreased. Mill stocks of all grades combined showed a decrease during September of 20,755 tons. Stocks of all grades reported by manufacturers at the end of September amounted to 224,508 tons including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks aggregating 147,743 tons.

The following stocks were reported on hand at terminal and delivery points on September 30th in addition to the mill stocks reported above: Newsprint, 1,308 tons; book paper, 3,368 tons; wrapping, 170 tons; fine, 206 tons; and miscellaneous, 285 tons.

**WASTE LIQUID SULPHUR DIOXIDE FROM  
SMELTERS FOR MANUFACTURE OF  
SULPHITE ACID.**

The U.S. Forest Products Laboratory is bringing to the attention of paper makers the possibility of utilizing liquid sulphur dioxide from the stack gases of smelters for the manufacture of sulphite acid. Liquid sulphur dioxide has many advantages over sulphur for this purpose, and the only disadvantage is the long haul between the smelters and most existing pulp-making centers. In certain cases, however, utilization of smelter gas assuredly offers material saving in cost as well as greater flexibility and ease of operation.

The smelter product is free from all foreign material except perhaps a very small amount of moisture. It might be produced in quantities far exceeding the demands of the sulphite industry.

Estimates indicate that liquid sulphur dioxide may be obtained f.o.b. at the smelter at a price considerably under that of an equivalent amount of sulphur. It would seem that pulp mills should make use of this waste product wherever the freight charges permit.

**NITROCELLULOSE FROM WOOD PULP.**

For over thirty years certain sporting powders have been derived in part from wood pulp, but only lately has there been any research looking toward the use of wood pulp in the production of cannon powder. The Forest Products Laboratory in recent experiments has succeeded in producing by all three pulping processes (the soda, sulphate, and sulphite) pulps which meet all surveillance tests for use in nitrocellulose manufacture. These pulps have been nitrated at the Picatinny Arsenal and run into powder of several calibres.

At certain steps in the process of manufacturing nitrocellulose, wood pulp can not be handled as easily as cotton, but at other points it yields to treatment more readily. On the whole, the differences in manufacturing are decidedly in favor of wood pulp. The yields are a little less than those obtained from cotton, but the material satisfactorily meets all laboratory tests for cannon powder.

Further work to reduce the cost of the wood-pulp product is now under way at the laboratory.—Technical Notes, U.S. F.P.L.

**MANY NEW COMPANIES GET CHARTERS.**

The general business activity of Canada is reflected in the large number of companies which are being incorporated from week to week. The following are among the latest of interest to the pulp and paper industry:

Illustrators, Limited, have been incorporated with a capital stock of \$40,000, and headquarters in Toronto. The company is empowered to buy, sell and deal in goods, wares and merchandise, more particularly to illustrate for the purpose of advertising, and also to prepare folders, catalogues, designs, etc. The incorporators are Harold W. McCrea, Harry L. Pinkerton, Isaac B. Somerville and W. A. Wright.

A provincial charter has been granted to the Rapid Electrotype Company, Limited, with a capital stock of \$250,000 and headquarters in Toronto, to carry on business as engravers, stereotypers, electrotypers, bookbinders, envelope and paper box manufacturers, stationers, etc., as well as to publish, sell and deal in newspapers, magazines and general printed matter.

A. T. Gilmour & Co., Limited, with headquarters in Montreal, and a capital stock of \$50,000 is another federally chartered organization to carry on the business of lithographers, printers, publishers, manufacturers of wall paper and also to make and deal in envelopes, paper bags, boxes, stationery, etc.

A provincial charter has been granted to the Seedsmen's Lithographic Co., Ltd., Toronto, with a capital stock of \$40,000, to conduct the business of printers, lithographers, publishers, bookbinders, paper makers, envelope, paper bag, box and carton makers, etc., as well as to deal in general articles for which these are made.

A federal charter has been granted to the Edmonton Lumber Exchange of Edmonton, Alta., with a capital stock of \$200,000. The new organization is empowered to carry on in all its branches a lumber, timber and pulpwood business and to manufacture, sell and deal in timber, logs, lumber and wood of all kinds, pulp, paper, etc., and to acquire timber limits, water lots, etc. Among the incorporators are J. W. S. Chappelle, W. F. Cavanagh, J. J. Nierengarten and Benjamin Shore, all of Edmonton.

### ALCOHOL HAILED NEW POWER KING.

New York, October 10.—King Alcohol was hailed as a new monarch of the realm of power in a symposium held Friday, October 10th, at Rumford Hall, by the New York Section of the American Chemical Society. The five well-known chemists who addressed the Section told of more new sources of alcohol which could be tapped and indicated many new uses for it. The facts brought out are encouraging to the possible development of sulphite waste liquor recovery.

Mr. B. R. Tunison said that probably ten times as much alcohol as was consumed before Prohibition days would eventually be utilized by the American people, albeit, they have decided to dispense with it as a beverage. In a normal year the United States drank 169,000,000 gallons of alcohol and used approximately 100,000,000 gallons in the various arts.

Among the sources which could be developed is the nipa palm which flourishes in the Philippines and other tropical countries and yields, said Mr. Tunison, about 15 per cent of sugar which could be fermented. From that source alone 50,000,000 gallons a year could easily be produced. The Mexicans brew a fiery beer from the sotol plant, a variety of agave which exists in very large quantities in their country from which millions of gallons could be distilled. By changing the cellulose of sawdust and other wood waste into sugar and then fermenting that substance, plenty more alcohol can also be obtained. It is identical with that derived from grain and is quite different from the methyl or so-called wood alcohol of the "Pink Elephant" brand which is made by another process. Considerable alcohol can also be derived from the waste of gas works.

In order to bring all these alcohols within the domain of the law, however, they have to be denatured or treated in such a way as to make them unfit for human consumption. There are now about forty denaturing formulas which are approved by the Internal Revenue Bureau. When alcohol is used "simple of itself" as honest Falstaff used to say of sack, the Government puts on a tax of \$4.15 a gallon even if employed for industrial purposes.

These undrinkable alcohols are used excessively as solvents in the various chemical industries and especially in the development of the rapidly growing dye industry. They can serve all well in the manufacture of rosins as a solvent and by their use a perfectly transparent product can be manufactured.

Mr. Tunison prophesied that as the petroleum supply decreases and the price of gasoline is therefore raised, alcohol will come into greater use as a motor fuel. Denatured ethyl alcohol, identical in composition with that distilled from grains, is now cheap in car load lots and there are compounds of it which are sold even now for only a few cents more a gallon retail than the price of gasoline. Mr. Tunison said that these new alcohol fuels yield more power to the gallon than does gasoline and do not clog carburetors.

There is also a demand for the so-called solidified alcohol which is made by adding paraffine and such substances to spirits.

Dr. F. W. Kressman gave details concerning the manufacture of "Ethyl Alcohol from Wood Waste."

Dr. G. F. Richmond told of the possible increased use of the so-called "Higher Alcohols" which are employed in the manufacture of extracts and perfumes.

Professor Ralph H. McKee spoke of "Alcohol from

Sulphite Wood Waste," and Dr. Leonard H. Cretcher's topic was "The Use of Alcohol in the Dye Industry."—Bulletin No. 245.

### HOW TO SAMPLE CHINA CLAY.

China clay producers have their own particular methods in sampling clays for different purposes, but generally speaking most tests, especially for color, are made by the use of water. The choice of surroundings in which clay is sampled is very important in the matter of color. We have known buyers, who were keen in disparaging clays for bleaching and paper purposes in order to persuade the seller that the clay was not of such good quality as represented, take clays into a yellow papered room in order to test them for whiteness! Clays should always be sampled in a white-washed room for preference, and in front of a frosted glass window. Under such circumstances the lights are even and permit of comparative color tests being easily made.

#### For Paper-Makers and Bleachers.

If the test is to ascertain its value to paper-makers and bleachers, color is the principal requirement. The method of testing the color of clay, although extremely simple, is at the same time perfectly satisfactory and sufficient. A plate, or some other vessel capable of holding water without causing a shadow at the bottom, is taken, and water poured into it to the depth of half an inch or so. The washed and dried clay is then put into the water in a state of powder, and some other clay, the quality and commercial value of which are known, is placed on the same plate. By comparing the two samples the relative value of the new clay for bleaching and paper-making purposes is readily decided.

Another method is to put samples of dry powdered clay on the edge of an empty plate and drip sufficient water over it to make the clay plastic, afterwards smoothing it over with a paint knife. Another effective test is to place samples of moist clay on a sheet of blotting paper, which absorbs the surplus moisture and leaves samples of equal wetness.

#### General Observations.

In water tests it should be carefully borne in mind that the water and clay ought to be mixed in proper proportions. That the test in this case may be perfectly satisfactory, it is necessary that the mixture of water and clay be in the proportion of 20 per cent clay and 80 per cent water.

The water with which the clay is mixed should be as pure as possible, for if it be impregnated with any vegetable or mineral matter, the color of the clay will suffer accordingly.

In testing the whiteness of clay, care must be taken:

- (1) That the water is pure.
- (2) That the margin of the vessel be low, as to cast no shadow.
- (3) That the clays with which it is compared be perfectly understood.

When testing for color, it would be of advantage if a dish or palette were procured, surrounded by discs of clay of different degrees of whiteness, with numbers to indicate the quality; the testing then would be much more easily performed.—China Clay Trade Review.

The author seems to have neglected entirely the matter of retention, which is of great importance, and also the matter of grit. It is our humble opinion that this manner of testing is entirely inadequate.—Ed.





## Technical Section



**B-9. Building a nation on a tree farm.** Robson Black. *Can. For. J.*, July, 1919, p. 315. Canada's forest possessions have been the backbone of continuous prosperity. What the future promises.—C.L.

**B-9. Forestry progress in Newfoundland.** J. D. Gilmour. *Can. For. J.*, June, 1919, p. 245. Discusses the general timber situation in Newfoundland, and describes particularly the operations of the Anglo-Newfoundland Development Company, of which Mr. Gilmour, a graduate forester, is chief forester and logging superintendent. "The burning of slash in spring will, from observations made on burns, give a better proportion of spruce than is attained by clear cutting and leaving brush to rot."—C.L.

**B-9. Private companies engage foresters.** *Can. For. J.*, June, 1919, p. 253. Lists the private companies in Canada which are employing trained foresters, and indicates the class of work upon which they are engaged; timber estimating and mapping, nursery work, planting, advisory to logging department, etc. Record progress is being made in the utilization of trained foresters by private concerns, particularly pulp and paper companies in eastern Canada. There is also a remarkable development of reforestation work by such companies.—C.L.

**B-9. Two sides of boundary: Is there a parallel?** *Can. For. J.*, June, 1919, p. 261. Discusses the approaching exhaustion of the forest resources in many of the eastern and southern states, and refers to the similar situation in portions of eastern Canada.—C.L.

**B-9. Canada's forests as an imperial asset.** Robson Black. *Can. For. J.*, June, 1919, p. 270.—C.L.

**B-9. A business plan for western forests.** *Can. For. J.*, May, 1919, p. 203. How the United States Government placed its National forests under forestry control; an analogy for Canada. An argument for giving the Dominion Forestry Branch jurisdiction over timber operations on Dominion licensed lands in the western provinces.—C.L.

**B-9. A proposed British Empire Forestry Association.** *Can. For. J.*, May, 1919, p. 207.—C.L.

**B-9. A land of forests—without forestry.** C. D. Howe. *Can. For. J.*, May, 1919, p. 213. Discusses the forestry situation in Canada, shows how serious is the situation and how little is being done to remedy it. "Canada stands almost naked on any forestry practice." Plain spoken indictment of the present situation.—C.L.

**B-9. Timber sale policy in New Brunswick.** *Can. For. J.*, May, 1919, p. 217. Some 400 square miles of timber have been disposed of on a timber sale basis, as distinguished from the license system formerly in exclusive use. The greatly increased revenues secured in this way amply justify the change of policy.—C.L.

**B-9. The great forests of South America.** Percy F. Martin. *Can. For. J.*, June, 1919, p. 264.—C.L.

**B-9. The new definition of forestry.** Dr. H. P. Baker. *Can. For. J.*, June, 1919, p. 267. Discusses the heavy utilization of French forests for war purposes. The war demands upon these forests have been estimated at seven times the normal production. On this continent also we must recognize that forestry is not alone the production of a crop of trees but also the harvest-

ing of the forest crop and its ultimate utilization.—C.L.

**D-4. Manufacture of fibrous pulp from sawdust and wood waste.** J. C. Van Wessem. *Eng. Pat.* 117,086, 27.6.18 (appl. 10,616/18) *Int. Com.* 23.12.15.—J. S.

**L-7. "Cell yarns."** A. Leinveber. *Kunststoffe*, 1918, 8, 234-235. *Chem. Zentr.*, 1919, 90, 11, 24, through *J. Soc. Chem. Ind.*, 33, p. 218A (1919). A complete description of the processes of manufacture, already fully covered in articles which have been abstracted. A.P.—C. (See class L-7.)

**K-2. Recovery of waste paraffined paper.** (Récupération des rebuts de papier paraffiné.) Porphyre. *La Papeterie*, 41, 283-4, (Aug. 25, 1919). It is advisable though not absolutely necessary, to cut the paper into narrow strips. It is then placed in a vessel having a metal screen near the top. The vessel is filled with hot water to a level above the screen, and is kept hot during the operation. The contents are slowly agitated (1-2 R.P.M.). The paraffin rises to the top, whence it can be drawn off, but the screen prevents the paper from rising. The recovered stock should not contain more than one per cent of paraffin.—A.P.—C.

### TECHNICAL QUESTIONS.

(From *La Papeterie*.)

Quest. 2. What is the influence of the amount of lime salts in the water on the degree of sizing paper?

Ans. The lime in the water reacts with the resin of the size forming insoluble salts which are very hard. This results in the formation of minute specks, invisible to the naked eye, about which water or ink is readily absorbed. When these are very numerous the paper becomes brittle.

Quest. 3. What precautions must be observed in order that the transverse strength of paper shall approach as nearly as possible to its longitudinal strength?

Ans. In this connection it may be well to recall the patent of Mr. Cartiaux (*La Papeterie*, Nov. 25, 1908). Just where the stock comes on the wire there are two rolls having their axes in the same vertical plane, and which can be raised or lowered according to the strength of the paper. The circumferential speed of the rolls is slightly inferior to that of the wire; hence, as the stock is held back, the fibres have time to felt both transversely and longitudinally. Two similar rolls are placed before the first suction box. This results not only in a better felting of the fibres but also in a more uniform thickness of the sheet. The drying is consequently more regular and the sheet is quite flat when it reaches the end of the machine.

Quest. 5. How is Carnauba wax used in the manufacture of coated papers?

Ans. Carnauba wax is a vegetable wax which may be used as a substitute for beeswax in certain cases, for instance, for the manufacture of coated papers. It cannot be used as it is but must first be saponified. This is accomplished by heating the wax in water together with Marseilles (Castile) soap and an alkali, the proportions being varied according to the requirements of each case.—A.P.—C.



# UNITED STATES NOTES

The use of carrier pigeons in a limited way during the recent severe forest fires in certain sections of the West seems to have demonstrated the practicability of employing these birds on a large scale for this purpose. In several emergencies in the coast States the particular use made of these birds was in having them convey messages from the fire fighters "at the front" to headquarters. The recent experiment lends special interest to a plan which is being considered for co-operation between the Department of Agriculture and the Navy Department, under which carrier pigeons and equipment of the latter department may become available. To establish a successful carrier pigeon system it will be necessary to lay plans during the coming winter to have the posts properly located and get the birds acclimated and begin their training. While carrier pigeons have been known to make flights of 600 miles in a single day, the usual distance to be covered in Forest Service work between fire fighting areas and headquarters would be for distances considerably less, probably not over fifty miles. The value of the birds would be particularly great in mountainous regions where travel is difficult.

Biron, a paper mill town in Wisconsin, is a municipality whose coffers have been so swelled during the past two years as a result of high taxes that its officials are finding it difficult to spend all of the money that has rolled into its treasury. When it was found that ordinary municipal improvements failed to deplete the town treasury, the village fathers decided to erect a community hall under a law recently passed by the Wisconsin State Legislature authorizing municipalities to enter into ventures of that kind. Though the edifice in Biron promises to be one of the finest of such halls in Wisconsin, its cost is putting no appreciable dent in the village exchequer. One of the town's biggest sources of revenue is the Consolidated Water Power and Paper Company, whose plant is located within the township confines.

Claims made by the Paper Box Makers' Union to the effect that more than 40 per cent of the shops in New York City affected by a strike begun there some weeks ago have settled and that 40 per cent more have indicated their willingness to accept the principle of collective bargaining, are emphatically denied by the Metropolitan Paper Manufacturers' Association through Harry R. Roden, secretary of the latter organization. Mr. Roden brands such statements as deliberate falsehoods, and asserts that the manufacturers, though willing to deal with the men regarding money matters, have never considered dissolving labor troubles with the union leaders, nor will they do so in the future.

With the carrying out of plans now being formulated by the New York State College of Forestry at Syracuse, New York State will lead the nation in intensive application of forestry to idle lands. This project is probably the first in America for the planting and owning of a communal forest for future economic returns, and will be used as a demonstration of the possibilities of forestry in New York State. Otsego County is to be the scene of the experiment and the plan is for the township to plant a forest of roughly 100 acres as a starting point. The several forests will be part of the

county system and will be connected with the highways to make them accessible from all parts of the county. The townships will buy the land and care for the forests, but the organization work is being done by the Otsego County Improvement Association which is completing a membership campaign to give \$25,000 a year for the promotion of this and three other general projects. The association hopes to have plans so far advanced that the first planting can be made next spring.

A satisfactory settlement has been negotiated between the Eagle Lodge of Paper Makers and the various paper manufacturers of Holyoke, Mass., and a long period of steady contentment on the part of the employees is looked forward to.

Earnings of the International Paper Company, due to high prices, are reported to be such as to warrant resumption of dividends on the common shares.

The heavy exporting business which paper manufacturers are doing is reflected in the strength recently shown by American Writing Paper Company shares. The Boston News Bureau, recognized as the official financial organ of New England, says: "Exports this year are more than 300 per cent in excess of last year. Writing paper manufacturers report the heaviest foreign business in the history of the industry. American manufacturers during the first seven months this year exported writing paper and envelopes valued at \$10,355,252 compared with exports for the corresponding period of 1918 of \$3,058,550 and \$1,772,467 for 1917."

The National Paper Trade Association has sent out a general announcement and schedule of committee meetings for its fall conference to be held at the Waldorf-Astoria Hotel, New York City, on the following dates: Board of Directors, Monday, November 10; Executive Committees of the Fine and Coarse Paper Divisions, Tuesday, November 11; special meetings of the Fine and Coarse Paper Divisions of the Association, Wednesday, November 12, and a general conference of the entire association, Thursday, November 13. The program will not include a banquet this fall.

Plans including the erection of two additional buildings whose operation when machinery is installed will double the capacity of its plant, are being carried out by the Nashua Gummed and Coated Paper Company of Middletown, Ohio. The projected improvements are expected to bring the concern's output up to \$2,500,000 a year, making it one of the largest waxed paper enterprises in the United States.

## B.C. NEWSPRINT BEING SHIPPED EAST.

During the past two months over 1,200 tons of newsprint has been shipped by the Ocean Falls plant of the Pacific Mills to New York, Kansas City and other points East. Part of these shipments have been through Prince Rupert and over the Grand Trunk Pacific Railway and part over the C.P.R. through Vancouver.

Previously, most of the output of this plant had been

# PULP AND PAPER NEWS

Norman E. Wainwright, of the Canadian Export Paper Co., Limited, Montreal, has been on an extended business trip to various points in the United States in the interest of the export paper business.

Col. John A. Cooper, a former well known Toronto newspaper man and publisher, who is now in charge of the U.S. publicity department of the Canadian government, in New York City, was in Toronto this week attending the re-union of the "Bufs," of which he is a former commanding officer.

The Provincial Paper Mills Co., Toronto, have inaugurated the double shift system at the coating paper plant of the company in Georgetown in order to catch up with orders. The strong demand for coated stock continues on all sides and every mill is rushed to the limit.

W. F. Christie, of the John Christie Co., Toronto, spent the past week at Sault Ste. Marie and other points in Northwestern Ontario on business.

A. P. Costigane, Safety Engineer of the Ontario Pulp and Paper Makers' Association, Toronto, visited the mills at Campbellford during the past week and found much interest evidenced in Safety work. He is spending this week at the various plants in the Niagara Peninsula.

George W. James, of the James Papers, Bowmanville, Ont., was married recently to Miss Sarah L. Woods of Owen Sound. He is a son of M. A. James, the veteran publisher, who for nearly forty years has been at the helm in the Bowmanville Statesman. It is interesting to note that the James papers, which since 1872 have been using a ready print inside, are now all home print, the change having recently been effected.

G. W. Saunders, Treasurer of the Mattagami Pulp and Paper Co., Smooth Rock Falls, Ont., was in Toronto during the past week dealing upon the trade. The plant of the company is very busy at present and enjoying its share of the active sulphite pulp market.

Ellis H. Wilkinson, dealer in paper and twines, 76 Bay Street, Toronto, has changed the name of his organization to the Wilkinson Paper Co. Recently over one hundred cases of goods reached Havana, Cuba, during a big eyelone. An interesting feature of the incident is that fourteen cases had been given up for lost owing to the fact that it had been impossible for them to be removed from the docks. On account of a heavy flood they were under water. The consignors were eabled to this effect but later, when the cases were finally opened, they revealed a triumph for Canadian packing as they were found with one exception to be undamaged, all the cases having been carefully lined with duplex waterproof paper, manufactured at Brampton, which is handled by the Wilkinson Paper Co., of Toronto. Of late there has developed a decided demand for this paper for packing purposes.

S. F. Dunean, of Toronto, secretary-treasurer of the Provincial Paper Mills Co., has returned from a successful duck shooting expedition in the neighborhood of Port Arthur.

W. J. Douglas, General Manager of the Mail and Empire, who passed away in Toronto last week, played a very important part in the development of Canadian journalism. He came to Toronto from Milwaukee in 1877, at the request of the late John Riordon who had purchased the Mail in that year and at once took an active interest in the development of the Canadian daily. In August last Mr. Douglas and wife celebrated their golden wedding. The deceased, who leaves a wife, three sons and one daughter, was a brother-in-law of Charles Riordon, President of the Riordon Pulp and Paper Co. and an uncle of Carl Riordon, Managing Director of the same company and a former President of the Canadian Pulp and Paper Association.

In the recent Ontario election R. J. Soden, bookseller and stationer, Peterborough, was the Conservative candidate in West Peterborough and in a three-cornered contest the Labor standard-bearer was victorious. G. W. Sulman, of Chatham, bookseller and stationer, who was the late Conservative member in West Kent, was not a contestant in the late campaign, and the riding was captured by the Liberals by a large majority.

All records in the production of newsprint were broken at the plant of the Laurentide Co. at Grand Mere, when on October 8 no less than 302 tons were turned out by the machines. On October 6 the production was 293 tons and on the day following 295 tons.

The ratepayers of Peterborough carried by a large majority the by-law for the purpose of granting concessions to the Nashua Gunned and Coated Paper Co. of Nashua, N.H. The by-law was to purchase a site and building (the former Cordage Company's works) in the south end of the city, at a cost of \$57,000. This will be leased to the Nashua Co. for a period of five years at an annual rental of seven per cent on the cost of the site and repairs, with the option of the company to renew the lease for a further period of five years and also an option of purchasing the property at any time during the tenancy of the company. The by-law also fixes the assessment of the company at \$10,000 for a period of ten years exclusive of local improvement taxes and school rates. Mr. Watson, engineer of the company, has arrived in Peterborough and has been busy laying out the floor area in preparation for installing forty thousand dollars' worth of machinery. It is the intention of the company to start operations in their new Canadian branch at as early a date as possible. Mr. Watson lately returned from England where he superintended the establishment of a branch of the Nashua Co., at Leicester. He also superintended the erection of a factory for the company at Middletown, Ohio, three years ago, and this branch has now doubled its capacity. In their new Canadian plant the company will devote special attention at first to the wax paper end and other lines will be developed later.

The absorption of the Toronto Paper Mfg. Co.'s plant at Cornwall by the Howard Smith Paper Mills, of

Montreal, has now been accomplished and the old directors of the company have retired. C. Howard Smith is the new President of the Toronto Paper Mfg. Co., and the other directors are Messrs. Pyke, Cameron, Robb, and Crabtree, all of Montreal. R. S. Waldie, late President of the Company, has retired and his withdrawal from the paper industry of Canada will be much regretted. He made a wide circle of friends by his genial manner, courteous disposition and upright character. He will now devote his entire attention to the Victoria Harbor Lumber Co., of which he is Vice-President, and to his other interests.

#### NEWSPRINT PAPER REVIEW FOR SEPTEMBER.

The average production of American newsprint mills based upon the weekly and monthly reports for the 12 months' period ended March 31, 1919, amounted to 105,650 tons of total print and 95,800 tons of standard news, whereas the actual production amounted to 111,434 tons of total print and 97,702 tons of standard news.

Mill stocks of both standard news and total print decreased during September 1919. About 4,000 tons of this reduction, which is due to corrected reports from the mills, should be distributed over prior months.

In addition to the stocks of 18,331 tons at mills, 1308 tons were reported on hand at terminal and delivery points on September 30, 1919.

Publishers' stocks decreased 3,238 tons during the period, which was counterbalanced in part by an increase of 1,871 tons in the newsprint in transit.

Fifty-seven publishing concerns hold about 54 per cent, of the total stocks at the end of the month.

#### PULP WOOD EXPORTS HALF OF LAST YEAR'S

Canadian exports of pulp and paper during August, 1919, amounted in value to \$8,348,179, as compared with \$7,118,398 in August, 1918, a gain for this year of \$1,229,781. Exports of pulpwood amounted to \$944,877 against \$1,978,012 a year ago, a falling off of \$1,033,135. The details:

	1918.	1919.
Paper and Mfgs. of .....	\$3,845,477	\$4,999,258
Pulp, chem. prep. ....	2,800,173	2,873,186
Pulp, mech. ground .....	472,748	475,735
Totals .....	\$7,118,398	\$8,348,179
Pulpwood .....	1,978,012	944,877

Totals .....	\$9,096,410	\$9,293,056
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The paper exports included 57,817 tons of newsprint, valued at \$4,140,812, the importing countries including the United Kingdom, United States, Argentine Republic, Australia, Brazil, British South Africa, Cuba, New Zealand, Peru and other countries.

Pulp and paper exports for the first five months of the fiscal year fell off \$3,431,118 in value and exports of pulpwood \$3,905,148 as compared with last year, the figures showing:

	1918.	1919.
Paper and Mfgs. of .....	\$18,332,587	\$22,531,667
Pulp, chem. prep. ....	13,319,092	5,756,479
Pulp, mech ground .....	2,174,521	2,106,936
Totals .....	\$33,826,200	\$30,395,082
Pulpwood .....	8,110,266	4,205,118
Totals .....	\$41,936,466	\$34,600,200

#### EGYPTIAN RICE STRAW USED FOR PULP.

According to recent consular advices from Egypt, results already recorded in the United States through experimentation with rice straw as a raw material in the manufacture of paper pulp, are confirmed and the possibilities of manufacturing paper in Egypt from rice, straw, old cotton rags (mostly colored) waste paper, papyrus reeds, (bourdie, etc.) and bagasse (sugar cane refuse), are made the subject of a report issued by an Egyptian Government committee of technical advice on printing.

Samples of the Egyptian rice straw were sent to England by the Ministry of Finance for testing. The results obtained showed that the straw when treated by the soda process yields pulp of good quality suitable for the manufacture of white paper. The straw could also serve for the production of strawboard and brown paper if treated either by soda or lime process.

Rice is grown in large quantities in Egypt and a sufficient amount of straw at a low price would always be available to guarantee the continuous running of a paper mill using rice as a raw material.

Experiments with bourdie failed to yield very favorable results, it being shown that, although this stuff can be treated very cheaply for the production of brown paper, the product is poor in comparison with paper made from ordinary straw. The pulp is only of moderate quality and difficult to bleach, and the yield is low.

Bagasse, the fibrous residue of the sugar cane after the extraction of the juice, is frequently assumed to be a suitable raw material for paper making, but experiments in Egypt have not proved commercially successful. In districts where coal is scarce it is more profitable to use bagasse as fuel.

From the above it will be seen that the important paper making materials available in Egypt are rice straw, colored cotton rags and waste paper, none of which are suitable for making first class papers, and their use would be limited to the manufacture of cheap papers. Papyrus, reeds and bagasse may eventually be converted into good white papers by new and improved methods, but meantime they could be used only as additional materials for cardboard and wrapping papers.

#### TRANSPORTATION TOPICS.

##### New Steamship Service Vancouver to Genoa, the Levant, Black Sea Ports and Egyptian Ports.

Advice has been received that the "Societe Generale de Transports Maritime a Vapeur" at Marseilles, France, is inaugurating a steamship service from Vancouver to Marseilles, and to Genoa, Italy, as well as issuing through bills of lading shipments to Piraeus, Smyrna, the Levant, Black Sea Ports and Egyptian Ports. The service commenced with the S. S. "Mont Cenis" loading at Vancouver October 20th, and other steamers will follow at monthly intervals.

Messrs. Dingwall Cotts & Co., of Vancouver, are understood to be the agents of the line.

Ashes should be kept in metal receptacles and never in paper or wooden barrels or boxes.



# The Markets

Toronto, October 20.—Each week seems to furnish something new in the pulp and paper line and the feature during the past few days has been the rapid rise in stocks of various companies that have been offered on the market, the advances in some cases being sensational. The question being debated in the public mind is: Is such a trend of affairs healthy and will not a reaction set in which may render the industry incalculable harm? There are divergent views in regard to the whole problem and here are the two sides as presented.

One leading supporter of the mills says that the industry never had a better and brighter future than at this juncture and Canada is now just beginning to come to her own in pulp and paper lines. The exports in paper, particularly newsprint, were never running so heavy, at at present, being over four million dollars ahead for the first five months of the fiscal year over the corresponding period in 1918. The exports of pulpwood have been little more than half for the first five months of this fiscal year of what they were last year. This means much for the future of the industry in Canada, for the less pulpwood there is exported the more there stays in the Dominion to be made into pulp and paper. The figures from the Department of Trade and Commerce each month are illuminative of what the industry is doing and the expansions which are characterizing it on nearly every side.

The other version in regard to stocks is that the present demand will not continue much after the new year and there is bound to be a falling off. There is also an undercurrent which manifests itself at times, to the effect that mills may be looking for business in a few months as, in the natural order of things, it is inevitable and a careful study of the market during the past few years shows that periods of slackness come around regularly. This is the opinion entertained on the other hand and between those holding these two views there is the fellow who believes in following the middle course, not giving way to too great optimism and not expecting stagnation or depression.

Newsprint plants evidently do not fear the future for great extensions are going ahead and the demand keeps up steadily while all the big concerns are speeding up production to the limit. The good news from Montreal that the leading publishers and the paper manufacturers have come together and arranged an amicable understanding on the price question for the coming year provides a bright spot in the development of the last few days. The publishers have, at last, come to the conclusion that the mills have been getting only a fair reasonable figure for their product and, with the commencement of 1920, four cents a pound is likely to prevail in the Dominion, which will be just double the figure at the outbreak of the war in 1914. Owing to the great call, from the other side of the line, the figure that Canadian mills will receive for their product over there, will likely be from five to ten dollars higher. The tidings that the long drawn out conflict between the publishers and the manufacturers is, at last, terminated will result in man's satisfaction on both sides and from this time the progress of the industry should be greater than ever. Both interests are determined to let bygones be bygones and, working together in harmony and mutual interest, the newspapers and paper producers will materially aid in the process of reconstruction and readjustment.

The demand for book papers continues good and when the local mills have caught up with business there is ample export trade for them to attend to, offerings which they are unable to take aboard at the present time. By the recent acquisition of the Toronto Paper Manufacturing Company, by the Howard Smith Paper Mills, many new specialties will be put on the market, among them being deckle edge book papers which have been imported in the past. Bristol boards, blotting paper, and a wider range of cover papers will also be produced.

While Canada has for years been exporting from eighty to ninety per cent of her newsprint paper there has not been a great deal of export done in other lines except a moderate amount in high grade bond papers and ledgers. The book and writing branch of the trade will now receive more attention. A large business may not develop with the United States in these

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# SULPHITES

Bleached and Unbleached of  
Canadian manufacture.  
Write and let us show you  
what we can do.

ranges but there are India, China, Japan, Australia and South Africa, who are clamoring for them.

There is a brisk demand for ground wood pulp and the prevailing figure now ranges from thirty eight to forty dollars per ton and even higher. It is said one reason for the scarcity is that two large firms in Quebec have contracted to sell their entire output during the coming year in Europe. This leaves a shortage on the market and the excessive requisitions for newsprint have resulted in an urgent call for mechanical pulp. Sulphite continues to hold its own in price and the demand is active and steady with quotations showing a tendency to rise. Large cargoes are being shipped overseas and all the plants are pretty well sold up. The most active requisitions are for bleached.

Jobbers are doing a good business but still complain at not being able to get many lines of paper and having to fill in, in many cases, to meet existing requirements, with whatever they have in hand or what they can get customers to accept. Coated paper plants are still very busy and all are now running two shifts, which has resulted in their catching up somewhat with production but they still have a long way to go. There are no changes in prices to record and everything swings along favorably in the paper arena. The soft coal situation however, is causing the mills some alarm and if the threatened strike in the United States takes place, it may prove a great hardship to a number of Canadian plants.

**Paper.**

*News (rolls) at mill, in earload lots . . . . .	\$3.45
*News (rolls) in less than earload lots . . . . .	\$3.52½
*News (sheet) at mill, in earload lots . . . . .	\$3.80
*News (sheets) in less than earload lots . . . . .	\$3.92½
xBook papers (earload), No. 1 . . . . .	\$9.75
xBook papers (ton lots) No. 1 . . . . .	\$10.00
xBook papers (earload), No. 2 . . . . .	\$9.50
xBook papers (ton lots), No. 2 . . . . .	\$9.75
xBook papers (earload), No. 3 . . . . .	\$8.25
xBook papers (ton lots) No. 3 . . . . .	\$8.75
Ledgers . . . . .	18c up
Sulphite bonds . . . . .	13½c
Light tinted bonds . . . . .	14½c
Dark tinted bonds . . . . .	16c
White Wrappings . . . . .	\$5.25
Writings No. 2 (MF) . . . . .	12½c up
Coated book and litho, No. 1 . . . . .	\$12.75
Coated book and litho, No. 2 . . . . .	\$11.75
Coated book and litho, No. 3 . . . . .	\$11.00
Coated book and litho, colored . . . . .	\$13.00 to \$14.50
Grey Browns . . . . .	\$5.25
Manila, No. 1 . . . . .	\$7.35
Writing No. 1 (S. C.) . . . . .	13c up
Fibre . . . . .	\$7.35
Manila B. . . . .	\$5.60
Tag Manila . . . . .	\$6.00
Un glazed kraft . . . . .	\$9.00
Glazed kraft . . . . .	\$9.00
Tissues, bleached . . . . .	\$1.35 to \$1.90
Tissues (unbleached sulphite) . . . . .	\$1.25 to \$1.75
Tissue, cap. per ream . . . . .	\$1.00 to \$1.40
Tissues, manila, per ream . . . . .	90c to \$1.20
Natural greaseproof . . . . .	13c
Bleached grease proof . . . . .	17c
Genuine vegetable parchment . . . . .	25c
Bleached white glassine . . . . .	24c
Drug papers, whites and tints . . . . .	19c
Paper bags, manila (discount) . . . . .	35 per cent
Paper bags, kraft . . . . .	37½c and 10%

Confectionery bags . . . . .	34 per cent
Gusset bags (manila) . . . . .	35 and 15 per cent
Straw board . . . . .	\$70.00
Chipboard . . . . .	\$70.00
Vat lined chip board . . . . .	\$75.00
Filled wood board . . . . .	\$78.00
News board . . . . .	\$80.00
Double manila lined board . . . . .	\$90.00
Manila lined folding board, chip back . . . . .	\$87.50
Pulp folding board . . . . .	\$95.00
Jute board, No. 3 . . . . .	\$70.00
Tag board . . . . .	\$120.00
White patent coated board . . . . .	\$125.00
Grey folding board . . . . .	\$115.00
Pasted board . . . . .	\$95.00

\* For Canada only.

x These prices are for machine finish, super-calender one-half cent higher.

**Pulp Prices.**

F.O.B. Mill.

Groundwood pulp . . . . .	\$38.00 to \$40.00
Sulphite, news grade . . . . .	\$70.00 to \$75.00
Sulphite, easy bleaching . . . . .	\$90.00

**NEW YORK MARKETS.**

New York, October 25.—Local jobbers report demand for paper to have eased up to quite an extent, due apparently to the printers' strike which has continued this week to keep the publishing industry in New York at a standstill. Reports from manufacturing centers, on the other hand, do not tell of mills experiencing any let up in activity. Rather, papermaking plants the country over are operating at full capacity and still have a sufficiency of orders booked to keep them running at maximum for several months to come. Evidently, the situation locally is waging little influence on the market as a whole. Doubtless publishers in other cities are using greater quantities of paper than ordinarily, because a good deal of the printing work usually executed in New York is being taken elsewhere on account of the strike, which automatically increases the consumption of paper in other printing centers.

The newsprint market is in a very strong position. In fact, the news market is easily the strongest branch of the paper market at present. Newspapers are not involved in the printers' strike, as a result of which many advertisers are switching considerable of their advertising to daily newspapers. Daily papers in all corners of the States consequently are putting out issues of record-breaking size, and the consumption of newsprint is of such volume that the production is scarcely able to cope with it. Spot offerings of roll news are extremely limited, and such manufacturers as have paper to dispose of in the open market are securing high prices, around 5.50 cents a pound being the ruling quotation.

Book paper mills continue to run at capacity and are still a far way behind in their orders notwithstanding that the printers' strike locally has affected the book paper market more than any other branch of the paper market. Mills with very few exceptions have their output sold up to the end of the year, and seem little concerned over the slowing up of demand during the past several weeks, probably figuring that when the strike is settled, publishers will come into the market for larger quantities of paper. Prices on book papers

# WOOD PULP TRADING CO., Ltd.

Rio de Janeiro, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

**Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.**

are firm and those seeking to buy are having much difficulty in obtaining prompt deliveries.

Fine papers are quotably steady and are moving actively. Consumers are buying in a consistent manner and have placed orders which will keep mills busily engaged for some weeks. Manufacturers are hesitant in looking further business, although it is understood that some are accepting orders for delivery as far off as February. Coarse papers are moving steadily and at firm prices. Wrappings are in good demand, as are tissues, and while supplies seem ample to meet the demand, there is no surplus in the market.

Boards are freely sought and prices are maintained. Mills as a rule are sold ahead from four to six weeks and are running full in an effort to catch up with orders, and while demand for deliveries further away is not as brisk as it has been in the recent past, manufacturers evince no apprehension over the outlook, probably feeling that when consumers have received a portion of the supply they now have orders in for, they will resume buying on a larger scale.

As an instance of the growing export trade in paper, Government statistics just compiled show that paper exports from the United States during the first seven months of this year were valued at more than \$13,000,000, which compares with exports valued at a little more than \$3,000,000 in the same period a year ago and \$1,500,000 two years ago. In other words, exports of paper from the States this year have increased more than four fold, and the probabilities are manufacturers could have shipped by far greater amounts out of the country had they had the paper to divert to foreign fields.

Ground Wood.—The mechanical pulp market remains very strong, demand having undergone no abatement, and prices ruling firm. Talk has been heard in trade circles this week of sales of No. 1 ground wood at as high as \$50 per ton, and it is known that transactions on a delivered consuming mill basis have actually been accomplished at this price. The market value of spruce pulp, however, still ranges around \$40 per ton at producing points. Few manufacturers have pulp to offer for prompt delivery but spot sales are generally at a basis of \$40 and it can be said that this is a more representative market price than \$50. Newsprint mills are eagerly absorbing all the supply found available and producers are frank to acknowledge that they are unable to satisfy the wants of buyers.

Chemical Pulp.—Demand for chemical wood pulps is somewhat quieter than recently in yogue yet quotations on the whole are maintained and there are no indications of sizable surplus supplies being in the market. Kraft pulp has displayed a little easier tendency as regards values and sales have been recorded at slightly reduced figures, but newsprint sulphite and bleached sulphite are actively sought and prices on these grades are strong. Producers of unbleached sulphite of newsprint quality are freely obtaining \$70 to \$75 per ton at shipping points for this grade of sulphite and are selling all the pulp they have to offer. Offerings of bleached sulphite of standard No. 1 quality are light and consumers are willingly paying the prices quoted—around 6 cents at the mill—for such supplies they find available. Sales of domestic kraft of No. 1 quality have been noted at \$80 to \$85, while foreign kraft has sold at \$82.50 up to \$90, depending on the amount involved. Arrivals of foreign pulp continue light and very little

of the supply coming here from Scandinavia is unsold. Reports from Sweden say that manufacturers there maintain that they cannot profitably produce pulp at prices ruling in the American market, with the result that offerings in this direction are anything but voluminous. Mills in Norway in the majority of instances, it is stated, are closed down owing to the inability of manufacturers to operate at a profit.

Rags.—Activity in low grades of rag stock suitable for feltmaking has featured the market this week. Felt mills in the East and West have been in the market for sizable tonnages of material and have paid fairly attractive prices, with the result that the movement of roofing rags into consuming channels has increased, whereas the better qualities of material continue to move slowly and at relatively low prices. Dealers offering repacked thirds and blues at 4 cents New York have reported having difficulty in securing orders, mills using these rags evidently having stocked up for a while and being indisposed to augment their holdings at this time. White rags also have been in restricted demand, although a comparatively good call has come from certain sources for choice packing of this class of stock. No. 1 repacked whites have sold at a basis of around 8 cents a pound f.o.b. New York, and reports have been received of sales of exceptionally fine packing of whites at as high as 10 cents New York. Roofing stock is selling at 2.60 to 2.70 cents f.o.b. New York for No. 1 packing. New cuttings are in slight demand, buyers in the majority of instances keeping out of the market excepting when finding rags available at bargain prices.

Paper Stock—Steadiness marks the old paper market which otherwise is lacking in feature. Consuming mills are absorbing supplies in a fairly steady way, and although some complaint is registered by dealers and packers over the scope of the demand, there is little question that most sellers are securing enough business to keep them well engaged. Board mills are buying low-grade stock in good volume, and while the tendency of prices in some cases is downward, there has been no important fluctuation in values. Folded newspapers are selling at 90 to 95 cents per hundred pounds f.o.b. New York and No. 1 mixed paper at 80 to 85 cent, while white blank news commands very close to 2 cents per pound New York, definite sales having been recorded at 1.95 cents. Shavings are quotably firm at around 4 cents New York for No. 1 soft whites and 5 cents for No. 1 hard white shavings. Books and magazines continue easy and are moving in limited quantities at a quotational basis of about 2 cents New York, although some mills are said to be refusing to pay this price. Kraft and manila rule steady and are moving in routine volume.

Bagging and Rope.—The market for old bagging is in a very quiet condition. Consumers evince a lack of interest and dealers endeavouring to book orders at what they deem fair prices are having little success in doing so. No. 1 scrap bagging is offered in numerous quarters at 2.75 cents per pound f.o.b. shipping point and is finding few takers at this or lower prices, mills apparently having their wants supplied and being disinclined to augment their stocks. Old rope also is in restricted call and those manufacturers in the market as purchasers are refusing to grant above 6 cents New York for No. 1 rope. Strings are quiet and quotably easy.



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New Modern Mills at SMOOTH ROCK FALLS, ONTARIO

## Bleached and Unbleached WOOD PULP of every description

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### M. GOTTESMAN & COMPANY

Incorporated

18 E. 41st Street

New York, N.Y.

Established 1886

## BRITISH TRADE NEWS

(From Our London Correspondent.)

London, 16th Oct., 1919.

In the aftermath of the great railroad strike comes a period of activity. The order of the day is "Full Steam Ahead." Paper mills are working full capacity, orders are plentiful, and pulp is changing hands with a remarkable degree of rapidity. There is an idea prevailing on all sides to work and make up for lost time; because, the strike gave the paper mill industry and the pulp business a rude shock just as the parties concerned were beginning to feel their feet after the effects of war. It also threw business at one side, upset schemes, and robbed mills of their greatest asset for getting away the finished article. The strike has now become a thing of the past and we are passing once more into something like a real business life. But there is only one difficulty still outstanding and that is the coal question. Many mills could do with more coal and the millowner who has allowed his stock to get extra low will find himself in a very awkward predicament in the coming winter, because, there is every tendency for a shortage in the coal industry and prices are high. Electricity for driving power is now receiving unusual attention and by not adopting it in industrial circles it is said the nation loses £600,000,000 a year. Paper-makers greatly favour electricity.

### Three Shift System.

The three-shift system, or 48 hours a week as a working week, in mills in the United Kingdom appears to be giving satisfaction to workers where it has been introduced. Up to the present no employer has expressed his opinion publicly on the system, but many of the workers have, because it means more employment for mill-hands. Mr. Frank Lloyd, the head of Lloyds, has always favored the 48 hours, or three-shift shift and I found now some mills have adopted his suggestion. Speaking at a gathering of the workers at Burnside one of the union officials said that the millowners of Burnside district welcomed the shorter hours. The 72 hour a week was too long for a man if he was to be any good to his mill, but under the new scheme the worker should be better, his work should be done better and he would take an interest in it and enjoy it more. This bears out a recent speech made by Mr. Frank Lloyd at a meeting of his firm. High wages and lavish expenditure are being met, as a nation, out of borrowed money and unless they could increase production in mills so that the turn-over is sufficient to pay wages and allow a reasonable profit, it is feared industries will suffer materially. At Burnside the stock rooms are empty of finished paper so that the outlook for workers in the district is good.

### The Pulp Situation.

The market for pulps is firm and the volume of business passing is satisfactory to sellers. Since the termination of the railroad strike the market soon recovered itself and things once more are normal again. There is no getting behind the fact the railroad upheaval caused a lot of anxiety to pulp men and millowners, because at the commencement people were in a dilemma. Pulp men, however, looked at matters in a broad-minded view. Instead of rushing into increased prices they simply waited for the turn of events and business has automatically fallen into its place again. Bleached sulphite is quoted from £36 10s to £37 15s;

easy bleaching (No. 1) £27 7s 6d to £29; sulphite news £23 12s 6d to £24 17s 6d; kraft £23 to £24 15s; moist ground wood £7 18s 6d to £8 for spot delivery. At the moment of writing easy bleaching sulphite is in good demand and some forward contracts are being fixed up. Ground wood is also active. The shipments arriving are satisfactory, considering all the circumstances, and Canada is contributing a fair amount of tonnage. In Norwegian circles mills are reported to be coming active again, but their export trade is severely handicapped through the want of shipping. Finland is also brightening up in pulps, but until the political crisis is settled it is feared the Finns will not seek much development in the markets.

### The French Mills.

I had a conversation the other day with a traveller who has just returned from France and he tells me that a great many of the paper mills are gradually getting back to their pre-war conditions. The demobilization of the army has enabled workers to return to their old jobs, but there is a scarcity of skilled men owing to the number of casualties in the war. All the mills running now are very busy and orders are plentiful. My friend predicts that from now onwards there will be a growing demand for pulps in France and the market there is worth inquiring into. Last year I had the pleasure of inspecting one or two mills below St. Omer. They were engaged in kraft production and all sections of the mills were as busy as could be. For the next twelve months there should be a big demand for paper and boards in France and Belgium.

### Mr. Lloyd Harris.

The Canadian Association here is entertaining Mr. Lloyd Harris, chairman of the Canadian Trade Mission, to a complimentary dinner. Col. Grant Morden, M.P., will preside. Mr. Lloyd Harris is doing some excellent work on behalf of the Dominion in England. He is a live man and is never bashful in telling the public what the resources of Canada are and what it can achieve in industrial circles.

### The Paper Market.

There is a good demand for newsprint and prices are unchanged. Consumers were in hopes of a reduction when the market was thrown open to foreign mills, but I am afraid their anticipations are not likely to be fulfilled as the cost of coal will not allow papermakers to make any reduction. Indeed, there is a tendency for the best writing and printing papers to be advanced in prices. The best writing paper today goes at 16 cents a lb. and super-calendered printing paper ranges from 12 cents to 15 cents. Kraft paper imported from Scandinavian sources is selling on the market at £51 18s 6d to £52 5s a ton. Judging by the conditions prevailing in Sweden and Norway at present I fail to see that they will be in a position to continue under-selling the English mills. Scandinavia is troubled over coal, shipping, scarcity of water and some labour troubles—problems that have an inclination to advance quotations.

### The Peebles Firm.

The report of Messrs. A. M. Peebles & Son, Ltd., for June 30th, 1919, states that a dividend of 5 per cent and a bonus of 4 per cent (9 per cent in all) is being paid on the ordinary shares which will absorb £9,000, leaving a balance of £50,924 14s 6d from which there is to be deducted income-tax of 6s in the sovereign and excess profits duty.

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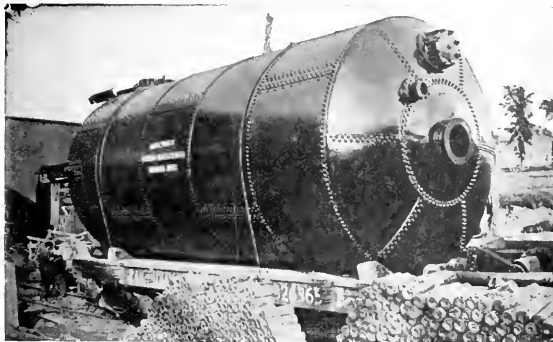
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Pulp Mill Diffuser Supplied St. Maurice Pulp & Paper Co.

## STEEL TANKS AND STEEL STRUCTURAL WORK

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A large stock is carried and we can fill  
 your requirements very quickly. Please let  
 us know your needs.

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 SHERBROOKE, - - QUEBEC.

MONTREAL OFFICE, 404 NEW BIRKS BUILDING.

## SOMEONE WILL BUY

the machinery that you have not the work for. It may be taking  
 up the valuable space in your plant that you are needing.

The Exchange Department Will Help to Sell it.

### MILL PRICES TO PUBLISHERS.

The weighted average price of contract deliveries from domestic mills to publishers during September, 1919, f.o.b. mill in carload lots for standard news in rolls was \$3.675 per 100 pounds. This weighted average is based upon September deliveries of more than 77,000 tons on contracts involving a total tonnage of more than one and a half million tons of paper manufactured in the United States. These contracts, most of which extend until December 31, 1919, include the few long-term contracts made prior to the war at very low prices.

The weighted average contract price based on deliveries from Canadian mills of more than 18,000 tons of standard roll news in carload lots f.o.b. mill in September, 1919, was \$3.667 per 100 pounds. This weighted average is based upon the September deliveries on contracts involving more than 200,000 tons of Canadian paper. The greater number of those are short-term contracts covering the year 1919.

The weighted average market price for September of standard roll news in carload lots f.o.b. mill based upon domestic purchases totaling more than 10,000 tons was \$4.58 per 100 pounds.

### Loss of Production.

Reports from 74 mills operating 176 machines running full or partial time on newsprint paper showed the total time the machines were idle decreased from 1,768 hours in August to 1,726 hours in September. No lost time due to lack of orders was reported.

### Imports and Exports.

The imports and exports of printing paper valued at not above 5 cents per pound (practically all newsprint) and of wood pulp for the month of August, 1919, compared with the month of August, 1918, were as follows:

	August, 1919.	August, 1918.
	Net Tons.	Net Tons.
Imports of Newsprint (total) . . . . .	47,131	46,863
From Canada & Newfoundland . . . . .	47,125	46,863
Exports of Newsprint (total) . . . . .	9,650	8,521
To Argentina . . . . .	3,781	1,558
To Brazil . . . . .	1,421	343
To Cuba . . . . .	1,116	541
To Chile . . . . .	509	309
To other countries . . . . .	2,823	5,770
Imports of Ground Wood Pulp (total) . . . . .	23,116	21,249
Imports of Chemical Wood Pulp (total) . . . . .	34,028	34,743
Unbleached Sulphite . . . . .	19,501	23,434
Bleached Sulphite . . . . .	3,800	1,668
Unbleached Sulphate . . . . .	10,339	9,173
Bleached Sulphate . . . . .	388	468
Exports of Domestic Wood Pulp . . . . .	3,646	2,110

The imports of newsprint for August, 1919, which were practically all from Canada and Newfoundland were 268 tons greater than for August, 1918. The exports for August, 1919, were 1,129 tons greater than for August, 1918.

The tonnage to "Other Countries" under the "Exports of Newsprint for August, 1919" includes 512 tons to China, 476 tons to United Kingdom, 275 tons to Uruguay, 268 tons to Japan, 225 tons to Peru, 156 tons to the Philippine Islands and 100 tons to Australia.

The imports of mechanically ground wood pulp for August, 1919, were 1,867 tons greater than for August, 1918. The exports of domestic wood pulp were 1,536 tons greater than for August, 1918.

The imports of chemical wood pulp for August, 1919, were 715 tons less than the imports for August, 1918. The bulk of this tonnage was unbleached sulphite and sulphate from Canada. The chemical pulp imported from Norway and Sweden in August, 1919, totalled 3,536 tons.

### LOSS OF WOOD PULP PRODUCTION.

The number of American grinders and digesters showing lost time during the month of September in operating mills was 1,302. These figures do not include the machines in four mills that were not in operation during September chiefly on account of repairs, lack of power and a strike. The hours lost were 2,131 more than in August.

According to the Federal Trade Commissioner's report the total stocks of all grades of pulp in the mills on September 30th amounted to 178,729 tons. Stocks of easy bleaching sulphite, sulphate pulp and Mitscherlich sulphite increased slightly during the month. There was a decrease during the month in the stocks of all other grades.

Comparing the stock on hand at the domestic pulp mills at the end of the month with their average daily production based on the 9-months' period ended April 30, 1919, the figures show that:

Ground wood mill stocks equal slightly more than 30 days' average output.

News grade sulphite mill stocks equal slightly more than 8 days' average output.

Bleached sulphite mill stocks equal slightly less than 7 days' average output.

Easy bleaching sulphite mill stocks equal slightly more than 7 days' average output.

Mitscherlich sulphite mill stocks equal slightly more than 6 days' average output.

Sulphate mill stocks equal slightly more than 14 days' average output.

Soda pulp mill stocks equal slightly less than 6 days' average output.

Mill stocks of "other than wood pulp" equal slightly more than 5 days' average output.

Total mill stocks of all grades equal slightly more than 17 days' average output.

### No Freight Rates from Esthonia.

The Pulp and Paper Magazine has been advised by the Transportation Expert of the Canadian Pulp and Paper Association that enquiries have been made regarding steamship service rates, etc., on freight traffic from Esthonia to the United States, in view of the possible movement of wood-pulp from that country. As far as can be ascertained the only company operating a direct service is the Scandinavian-American line, and it seems that they are unable to quote at present from Reval and at this time they are not even operating a service from that port.

In this connection it may be interesting to note that the rate at present on wood pulp from Gothenburg, Sweden and Kristiania, Norway to North Atlantic seaboard ports is Kr. 30 per 1,016 kilos, which at the present rate of exchange is equal to about \$7.88 per ton of

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

Published every Thursday by the Industrial and Educational Press, Limited, Garden City Press, Ste. Anne de Bellevue. Phone 165.

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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

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No. 45

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A dollar bill is Canada's promise to pay.

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But Victory Bonds pay  $5\frac{1}{2}\%$  interest.

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Victory Bonds pay nearly twice as much as Savings Banks.

Consider the saleability of Victory Bonds—

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Their prospective advancement in price—

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These are the best reasons in the world for exchanging one kind of money for another.

Every Canadian should put all his weight behind this Loan.

He should exchange every dollar possible for Victory Bonds—and every dollar he can save for the next ten months.

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# EDITORIAL

## A REQUEST FROM BERLIN.

The Pulp & Paper Magazine has received a request from an advertising agency in Berlin for the advertising rates and sample copies of the magazine. It has been difficult to reply to this letter without permitting our manner of expression to degenerate into remarks that would be decidedly out of place on the editorial page of this magazine. The reply follows, and we would say that if any of our readers feel that they are being slighted by not having the privilege of reading advertisements of German machinery in the Pulp & Paper Magazine we should be glad to advise them where they may obtain such information. We do not wish to be an agent in the disposal of goods which may have been stolen from our allies or manufactured with machinery confiscated by the Huns, or which is being manufactured in unharmed factories in unfair competition with the products of plants that were ruthlessly destroyed by the invading Germans, apparently for this very purpose of giving them a chance now to gain a commercial advantage. We realize that Germany must export material in order to pay her indemnity, but there is little of this which is essential to this industry and unobtainable elsewhere. It is far from our intention to hinder the healing of the German wound, but our first duty is to those we have loved the longest—and best.

November 4, 1919.

Ala Allgemeine Anzeigen-Gesellschaft m.b.H.,  
Anstandsabteilung.

Berlin, S.W. 19, Krausenstrasse 38/39.

Sirs:—Your letter of Aug. 20th has been received and we would say that the publishers of the Pulp & Paper Magazine of Canada are not inclined to avail themselves of the assistance of your concern in placing before the pulp and paper industry of Canada the advertisements of German manufacturers of paper making and other machinery and products.

There are two reasons for this. One is that our little concern in doing their share to help protect the principles, democracy and righteousness, sent ten of their men to serve under the colors of the British Empire. Two of them will not come back. The pulp and paper industry, as did all other Canadian activities, made great sacrifices to prevent the world from being submerged in the flood of Teuton militarism and savagery.

Events that need not be described will not soon be forgotten.

The second reason for declining your assistance is because the catastrophe the central empires precipitated has resulted in such a development of industries within the empire and by our good friends and neighbors that Canada could get along very well without German products. If it is found necessary to pro-

ure material from your country which cannot be obtained elsewhere it will not be difficult to get in touch with those who could supply such material and there is no doubt but that the commercial spirit of your countrymen will be glad to accommodate possible purchasers.

To put the matter very bluntly we are of the opinion that Canadian Pulp and Paper makers do not want German machinery and our friends who are represented on our advertising pages would keenly and properly resent being associated in type with any concerns whose countrymen entirely disregarded the very simplest principles of honesty and fair dealing.

We do not care to be a party to unfair competition of factories unharmed by the war with those damaged by your countrymen apparently for the purpose of putting a commercial handicap on your rivals.

INDUSTRIAL & EDUCATIONAL PRESS, LTD.,

Publishers of the

PULP & PAPER MAGAZINE OF CANADA.

## NEWSPRINT IS SCARCE.

Market reports for several months past have been emphasizing the strength of the demand for newsprint and the increasing cost of spot lots. Interest centers now, not so much in the price as in the ability to get the goods. This is worrying the big papers some but the small ones very much. The big publisher is in a position to turn down a few advertisements or to decrease their size if he is short of paper and can save tons of paper by printing fewer copies. The small publisher is not so independent with his advertisers and cannot afford to bid in competition with the big fellow. It is up to the paper mill to see that he is supplied at a price based on cost of production rather than supply and demand. His paper fills an important place and in the aggregate, the small papers use a lot of newsprint. As contracts run out, and many of them recently have been for short terms, the manufacturer has a great opportunity for profit or for service. We believe that by giving the latter he will get more of the former, in the long run.

The temporary embargo on exports from American ports will affect some Canadian shippers of pulp and paper. This will doubtless be no more serious than a delay in shipments but may result in some congestion. With the breaking of the longshoremen's strike in New York, a number of vessels are being unloaded and cleared. It will be unfortunate indeed if a serious stoppage in the movement of freight should occur at this time, when every effort should be made to clear the tracks and freight sheds.

*THE CHILD IN INDUSTRY.*

If we were to allow our Irish ancestry to show through we would say that the best place for children in industry is out of it. In the United States there has been for many years a strong movement to discourage, if not entirely to prevent, the employment of children in factories, mines and stores. A parallel movement endeavours to require the attendance at school of such children as are thus barred from industrial work.

Such a movement, and the two phases just mentioned of child welfare endeavour, should be considered as a single movement with two definite aims. The first may properly be said to be the improvement of the physical, intellectual and perhaps even moral welfare of the child and the second, which is closely related to the first, is the distinct advantage to the state which comes from having a strong, intelligent, and responsible citizenship.

To use the words of Ruskin, "To become a man too soon is to become a small man." The forcing of maturity at an early age upon either a boy or a girl not only results in a small man or woman physically, but it also results in smallness of intellect and narrowness of vision as well as incapacity for the appreciation of obligations and the assumption of responsibility. Twenty-nine per cent of the ten millions and more of young men who were examined for military service in the United States were physically unfit and there are reasons to believe that much of this disability was due to the fact that children have been permitted to engage in work for which they were not sufficiently developed physically. Such unfitness is not only serious from the point of view of defence because of the large number of men of military age that are incapable of bearing arms when it becomes necessary to call on them to do so, but the lack of health and strength is a serious handicap to the industries of a country where such conditions exist. The principal factor in industrial production, in fact in production of any character, is the physical and mental alertness and energy of the people. Any cause, therefore, which decreases the physical or mental power, decreases the most important resource of a country.

Another important effect of weakening a nation physically is the certain inefficiency of the coming generation.

One of the serious conditions that industry has now to face is the lack of workmen with sufficient education to assume properly the responsibilities that go with advancement which is often earned by reliability in the discharge of duties. Many a good workman is not promoted to the position of foreman and many a foreman of skill and natural administrative ability cannot be promoted to department head or superintendent because he lacks the education which is necessary to understand and carry on the work of such a position. Many men who have been turned out at an early age to

earn their living have devoted hours of lonely effort in studies that have brought to them at least the elements of the education they had been forced to forgo. Lack of training is not only a handicap to industry because it deprives many a concern of the full services of such men, but it is even a more serious disadvantage to the man and his family because of the extra earnings that might and should be his if he had been required to remain at school for a few more years.

It has frequently been pointed out in these columns that the school years which a boy or girl loses by going to work before school days are over are the most important. It is during the period from twelve to fourteen years and up to sixteen that children begin to grasp what school work means, and if properly directed there begins to form in their minds a definite purpose to which they could apply the lessons which without such a vision are all too frequently looked upon as simply drudgery.

Keeping children out of factories, shops and mines until they are fourteen or sixteen years old undoubtedly has a favorable affect on their bodies, but to allow them to roam without continued mental direction and improvement is to encourage a crop of social weeds which may be the more serious because it is stronger. Physically defective people are a liability both industrially citizens are a menace which could only be properly eliminated by suitable provisions for, and methods of, educating the boys and girls. With the development of the mind there is also associated a coincident development of moral responsibility, and this is really the most important result of educational effort. To train the intellect only without developing character is a sad mistake and a province, state or nation is bound to suffer if it does not make a definite effort for the moral as well as the intellectual training of its future citizens.

The movement for child labor legislation and for compulsory education has developed beyond the stage of a program advocated by social workers. It has been fully endorsed and advocated by labor leaders and has even been endorsed by large employers of labor. And this support from employers is not simply a recognition of the humanitarian basis for such a movement but it may even be said to represent an appreciation of the added value, both to the concern and to the intelligent workmen because of his ability to earn more for himself and his employer.

Another feature of the abolishment of child labor and substituting compulsory education for strenuous hours of employment in early years is that the resulting increase in trained intelligence will make possible a much better relationship between the employer and his workmen. There will be a better chance of the workman understanding and appreciating the problems of management sufficiently to fit him for participation in the internal affairs of the concern which affect him and to which participation he is entitled, but will also develop



a deeper appreciation of the responsibility which each person should have for the welfare of the whole community.

Thus we see that the movements for abolishing child labor and encouraging compulsory education have the most far-reaching effects on the future of our people as individuals as well as a nation.

#### HOW LABOR DISPUTES MUST BE SETTLED.

George W. Sisson, Jr., President of the American Paper and Pulp Association, is attending the President's Industrial Conference as one of the advisory delegates of the employers' group.

The following interview reflecting his ideas has been widely used in the daily press:

"No law can settle labor disputes, but a new sense of their responsibility to each other on the part of employer and employee could so do," declared George W. Sisson, Jr., of New York, president of the American Paper and Pulp Association. "The idea I am expounding and which I believe is making headway with the delegates is that both sides must cease to act from the standpoint of local advantage, as they have so often done in the past, and act from the standpoint of principle. This principle is the acknowledgment of the absolutely fair play that each side owes the other.

"Students of labor difficulties know how the occasional injustice on the part of an employer who drove too hard a bargain or a group of employees who caught the employer on the hip, has caused one whole class to distrust the other. There seemed to be no proper sense of responsibility and therefore confidence fled.

"Two great facts stand out in the Industrial Conference to-day. One is that none of the vexed problems of industrial relationship could long endure in the presence of an established sense of this new responsibility of employers to workers, and vice versa, and the other is that under the extraordinary conditions which the conference affords it would not be difficult to inaugurate this spirit of responsibility.

"Injustice and unfairness, real or imagined, create all the difficulties. No legislative enactment will bring a cure, for you cannot make men good by law. The solution lies in creating the new spirit which would lead immediately to a new industrial morale. How extremely necessary this is becomes apparent when it is remembered that none of the questions of relationship between employer and employees are ever really settled except by the parties themselves. When they begin to believe in each other a settlement is always in sight.

"No Governmental machinery, no shop committee or works council or any other device has been able to achieve any degree of success except where the sense of mutual responsibility has been inculcated.

If the Industrial Conference will lead the way in this matter it can build its own monument in a single day."

#### COBWEBS.

A fine piece of printing which contains some interesting reading and excellent illustrations is the booklet entitled "Paper", recently issued by the Canadian Export Paper Co. It contains illustrated descriptions of the mills represented by the company, with a brief article on newsprint manufacture and a longer one on logging operations and reforestation.

On another page of the magazine will be found an article on the estimation of groundwood and sulphite fibres in newsprint and other papers containing this material. Where there is such a distinct difference under the microscope between the colors of the two fibres when chemically stained one would expect an easy task to determine the amount of each. This, however, is not the case and importance of making a correct estimation will readily be recognized by managers and superintendents as well as paper mill chemists. The Pulp and Paper Magazine will be glad to have further comments and suggestions on this important subject.

Mr. Lloyd Harris ends his mission in London with many expressions of the high regard in which he was personally held by the English people and of the appreciation of his efforts by the many business men who have been served by him. Mr. Harris has served Englishmen as well as Canadians by assisting trade in both directions. He has been untiring in his efforts to promote business connections with the Old Country.

The New York Times has invented a new calendar. In a recent paper the announcement is made that an exhibition of book bindings will be held on Nov 31.

In the public library at Flint, Mich., "Worm Gearing" is listed under Medicine and Biology.—Illustrated Daily News. The librarian will want a set of those text books that are being prepared for the Pulp and Paper Industry.

The Paper Mill has followed the example of the Literary Digest, printing their last issue from zinc plates made from type written copy. Its four pages contains a considerable amount of real news. Good Work, Derby!

#### JOSS PAPER.

The Swatow district is probably the largest producing centre of joss paper in China. Its average annual export amounts to half the total export from all China. In addition to supplying the local demand the following amounts were exported: 7,111,333 lb., valued at £250,000, in 1916; and 7,023,200 lb., valued at £214,000, in 1917. About one-half of the export was sent to Hong Kong, Siam, the Straits Settlements, and the Dutch Indies.

South-western Fukien supplies Swatow with the paper for joss-paper making. Only the lowest grade, third quality, paper is used. Chao-an district is the chief centre of the industry.

The manufacture of joss paper is a simple process. Tin foil and the paper are cut in the desired sizes and shapes—usually square—and a sheet of tin foil is pasted on one side of the paper. In this sheet it is sold to the retailer, and it is he who makes it into the common form of "shoes of sycee" or other forms, the yellow representing gold and the grey silver. It is burned by the Chinese at funerals, at masses for the dead, etc.—Journal Royal Society of Arts.

# The Quantitative Estimation of Mixed Pulp in Newsprint Paper

By "Snowshoe," Belgo Canadian Pulp and Paper Co.,  
Shawinigan Falls, P.Q.



Mixture of 25 per cent sulphite and 75 per cent ground wood, by weight.

This is a subject which appears to keep very much in the background in the technical journals serving the pulp and paper industry, yet it is undoubtedly a matter of considerable importance.

As far as the printer and publisher are concerned, it is not of much interest to them to know the actual percentages of ground wood and sulphite fibre in the paper they use, as all they require is a paper satisfactory for their uses and at a satisfactory price.

Of course, it is perfectly ridiculous for anyone to say to the paper-maker—"You must put 25% sulphite pulp into your newsprint." This idea seems to have made some headway in certain circles during the recent investigations in the U. S. A. that is, of stating a definite percentage of sulphite pulp for use in newsprint, similar to allowed amounts of water, in milk and butter, by legislation. If such bone-headed legislation ever comes into force, everyone in the pulp and paper business, can imagine what effect it would have on the manufacturing end of the business. It would also have the effect of requiring a definite standard method of analysis (quantitative) for mixed pulp in paper, as there would be any quantity of disputes as to percentage content.

At the present time the subject is of most interest to pulp and paper-makers themselves. For instance, a paper man may receive a sample of newsprint from a competing mill of very much better quality than he is turning out and he would wish to know among other things, what percentage of each kind of pulp was present. He would naturally turn to the mill chemist if the mill employed one, and the chemist would be "up against it" if he had no working knowledge of quantitative estimation of fibres. Another important reason why mill chemists should be more or less expert at this fibre estimation is found in their own

mills. Under modern conditions we find many mills using their pulps in the form of slush and not in lap form and it is in the writer's experience that this method of working leads to disputes between the pulp mill on one side and the paper mill on the other. This is particularly the case as regards slush sulphite. The paper mill will state that they are using a certain percentage of sulphite slush in their paper and if this tallies with the production figures in the sulphite mill everything is O.K. On the other hand if the sulphite mill finds a production shortage, it is more or less natural to suspect the paper mill of using more slush sulphite than they are stating.

Who is to settle this matter? The chemist of course! And he is in the position of awaiting a "black-eye" from one side and a "thick-ear" from the other, according to what results he finds. He is perhaps handed a sample sheet of paper and asked to determine the amount of sulphite therein. How is the chemist to set about the problem? In the first place, will any hand sample of paper be representative of the actual amounts of sulphite and ground wood being put into the mixers or beaters? The chances of variation in per cent of sulphite in two samples taken say at two hours interval are doubtless considerable also the chances of variation from minute to minute on the same machine appear to be considerable, when one considers the modern method of mixing pulps.

However, the problem before us is to determine the amount of sulphite pulp in a single hand sample or several samples of paper. There are the chemical methods and the microscopical tests. There are several chemical methods, one of which depends upon the reduction of gold chloride to metallic gold by lignified fibre, another uses diamine test papers and there is the iodine absorption test. As to the use of



Mixture of 25 per cent Sulphite and 75 per cent ground wood, by weight.

chemical methods it must be remembered that the basis for these methods is the reactivity of various reagents with lignine. We are not likely to encounter absolutely pure cellulose in newsprint paper, in fact the average sulphite cellulose reacts considerably with the reagents used in the chemical determination of ground wood in mixtures. Iodine particularly is absorbed by ordinary sulphite fibre as the following figures show:—

1 gram each of air dry ground wood, sulphite pulp and newsprint paper were treated with N10 Iodine in glass stoppered bottles for 65 hours and showed the following figures for Iodine absorbed Ground wood 15.0 percent, sulphite pulp 6.2 per cent, newsprint paper 9.0 per cent.

Clearly, this does not look encouraging as a quantitative test for mixed pulps. A further test on one half gram sulphite for 22 hours gave an Iodine absorption of 5.1 per cent.

Further, Cross & Bevan in "Cellulose" mention that celluloses absorb from 3 per cent to 4 per cent of Iodine. On these results, and when one considers the variation in purity of ordinary Ritter-Kellner sulphite from day to day, the use of Iodine for estimation purposes, appears to be impossible. In short, chemical methods of any kind appear to be out of the question and we are forced to fall back on the microscope for help.

Suppose a technical man is handed a sheet and is requested to determine the percentage of sulphite therein; if this man has no working knowledge of microscopical estimation, he would be well advised to leave the problem alone, as he would almost certainly give his result, with much too high a percentage of sulphite and in the supposed case above mentioned, the office man would think that he had found the reason for his rival's superior paper, but he would have been misled. Anyone new to microscopic analysis should first make up a standard mixture of say 75 per cent dry, long fibred ground wood pulp and 25 per cent dry first quality strong, news sulphite pulp. The mixture in water should be diluted considerably. This mixture should be carefully sampled, made up into slides and carefully examined after staining with Iodine. A magnification of around 40 diameters is very convenient to use, the actual "field" being just about 2½ millimetres.

The method of working is as follows: Focus on a part of the slide, which will contain in the field of view, say fifteen fibres of various lengths and sizes, rapidly estimate by observance the relative proportion of each type of pulp and put these figures down on paper. Do this a number of times till the slide has been fairly covered, then take the average of the figures. In the case of a prepared 25-75 per cent mixture, the figures for sulphite will probably average around 38 per cent in the averages found and not 25 per cent as might be imagined and a novice in examining such a mixture would undoubtedly give much too high a result if he simply gave the **apparent** percentage of sulphite. The two photomicrographs show 25-75 per cent fibre mixture, and it is evident on examining them that there is **apparently** much more than 25 per cent sulphite fibre present. This apparent excess of sulphite over the amount mixed up, is very persistent, with varying qualities of both kinds of pulps.

The following figures were obtained on a mixture of 75 per cent dry ground wood and 25 per cent dry sulphite made on September 22nd, 1919, three different slides being made up.

	(1)	(2)	(3)
	Mech. Sulphite	Mech. Sulphite	Mech. Sulphite
	per cent.	per cent.	per cent.
65	35	70	30
60	40	75	25
70	30	55	45
80	20	60	40
65	35	60	40
50	50	60	40
75	25	45	55
85	15	55	45
55	45	60	40
55	45	45	55
—	—	—	—
66	34	58½	41½
—	—	—	—

Mean of 30 estimations = 38 per cent sulphite.

It will be noted that in only five cases do we find 25 per cent or below of sulphite, all the others being substantially above 25 per cent. Why is this? Evidently because the apparent bulk is not in accordance with the wholesale weight of dried fibre. Any given sulphite fibre has had its lignified matter dissolved away and it apparently occupies about as much space under the microscope as its untreated ground-wood neighbour. If we examine into the figures for cellulose and lignin we find roughly as follows:—

Cellulose M. Weight=162. Lignin M. Weight=370 and roughly ground wood may be considered as follows:—

Cellulose 60 per cent.]	} Molar Weight = 245.
Lignin 40 per cent.]	

Presuming the same bulk to both kinds of fibre, and having the figures 162 for sulphite and 245 for ground wood, we see that the sulphite is about 34% lighter than the ground wood, which agrees fairly well with the microscopic figures, 25 per cent plus 34 per cent increase equals 33½ per cent sulphite. It is evident from these figures that some allowance must be made in microscopical estimation of fibres to make up for this loss in weight on the cellulose. A large number of estimations have been made by the writer in various times, and always the tendency is to estimate the sulphite far too high in normal "news" mixtures.

Paper made in most U. S. A. mills is more difficult to analyse by this method, than Canadian newsprint, this being due to the much greater treatment that the fibres have undergone in U. S. mills, producing many fibrillae and small fibres, thus tending to disguise the difference between the fibres. The Canadian made newsprint having undergone little more than a mixing process, shows most fibres clean and readily differentiated, according to the grade of pulp made.

Some twelve years ago the writer made a series of estimations on Scandinavian ground wood and sulphite mixtures, in Europe, and found that a 75-25 per cent mixture gave 63 per cent. G.W. and 37 per cent sulphite by direct microscopical estimation, while a 65-35 per cent mixture gave on careful estimation 51 per cent G.W. and 49 per cent sulphite. Various mixtures were made of these Scandinavian pulps and their percentages carefully estimated under the microscope. It was found that as the percentage of sulphite increased, the tendency to overestimate it decreased and vice versa. The following conclusions were come to:—

**Corrections to be made. (Scandinavian Pulps).**

- (1) In mixtures estimated as containing 50 per cent sulphite, by microscopical observation, deduct 3/10 of the estimated percentage of sulphite and add this to the estimated amount of ground wood.
- (2) Mixtures estimated at 65 per cent sulphite deduct 1/4 of this and add to G.W.
- (3) Mixtures estimated at 80 per cent sulphite deduct 1/10 of this and add to G.W.

Recently the writer has made very careful estimations of many Canadian pulp mixtures and has reached the following conclusions:—

**Corrections to be made (Canadian Pulps).**

In estimating mixtures under the microscope, when mixtures show around 42 per cent sulphite fibres by direct estimation, the following correction is necessary—deduct from 42 per cent, seven-eighths (7/8ths) of 42 and add result to estimated percentage of ground wood fibres. This factor (7/8) holds good down to 35 per cent sulphite estimated but below this, the factor must be increased as the estimated percentage of sulphite falls.

The following facts and figures will serve to show the importance of the microscopic estimation of fibres. On Nov. 12th 1918 the paper mill was supposed to be using from 21 per cent to 23 per cent of sulphite pulp in the beaters, and the sulphite mill disputed this, so an examination of the paper was made, showing the following percentages of sulphite:—(1) 10 tests = 47½ per cent; (2) 10 tests = 45½ per cent; (3) 10 tests = 45 per cent; (4) 10 tests = 37½ per cent; (5) 10 tests = 43½ per cent.

Mean 50 estimations = 44 per cent sulphite. Deducting 7/18 of 44 we get 27 per cent of sulphite pulp in place of 21 to 23 per cent, namely 5 per cent excess sulphite.

Of course the personal equation enters considerably into the question of micro-estimation, and the figures given would not probably be the same for another person, but whatever way one looks at it, every person would doubtless estimate sulphite in mixtures always too high if no corrections were made. The facts and figures given serve to show that the estimation of sulphite in newsprint is the reverse of easy.

As to the question of how near we can get to the actual content of sulphite and ground wood in mixtures, the accuracy undoubtedly increases as the number of estimations increase and it appears that a one per cent variation either way from the actual amount ought to be easily possible, that is, if 25 per cent is actually present, the chemist should find not below 24 per cent and not over 26 per cent.

**SMALL DAILIES AND WEEKLIES THREATENED.**

Washington, November 3.—Small daily and weekly newspapers are threatened with destruction because of inability to obtain print paper, the House was told today by Representative Reavis, Republican, Nebraska. He charged that newsprint manufacturers were refusing to sell small publishers, in order to fill the wants of the metropolitan dailies.

Paper consumption by the big city dailies and magazines has been greatly increased. Mr. Reavis said, by an "extensive national advertising campaign conducted to defeat the Government in collecting taxes." He urged that the internal revenue department investigate the returns of concerns conducting the campaign, disclose to what extent their excess profits tax was reduced by the costs of the advertising.

**ADDITIONAL ABSTRACTS.**

**A-45. Sampling bales and rolls of chemical pulp.** (Echantillonnage des balles et rouleaux de pâtes chimiques.) Sindall & Bacon. Paper Makers' Monthly J. La Papeterie, 41, 200 (July 25, 1919). The wedge method of sampling, which is accepted as the best for bales of pulp, can easily be suited to the sampling of rolls also. In their book on the testing of wood-pulp S. & B. advise dividing a roll into 5 concentric cylindrical shells of equal volume and taking equal sized samples from each. The samples need not be of the same size provided their area is proportional to the volume they represent. The samples may therefore be taken at equal intervals from the center, making the width proportional to the distance from the center.—A.P.C.

**K-12. The formation of froth.** James Scott. Paper Maker & Brit. Paper Trade J. 45, 67-69 (1918-19). The causes and remedies of froth are discussed and illustrated by photomicrographs.—J.S.

**L-0. Squirting nozzles for use in the manufacture of strips and the like from viscose or other similar Cellulose solutions.** Courtaulds, Ltd. London, and J. E. Criggal. Eng. Pat. 127,155, 31.7.18 (appl. 12,513/18).—J.S.

**R-7. The eight-hour day in France.** (On se pense de la journée de huit heures?) J. Micol de Portemont. Le Papier, 22, p. 172 (June, 1919). The law which has recently been passed in France merely lays down the general principle—the details yet remain to be worked out.—A.P.-C.

**NEWSPAPER CIRCULATION.**

Figures published show that the four most widely read newspapers published in the city of Paris put out between them daily 7,600,000 copies. These, it is true, circulate pretty generally over France (excepting perhaps the southeast. Even if they reached the entire territory they would still have a per capita circulation of one copy for every five inhabitants. There are many other French dailies of large circulation, which might bring the ratio to one daily for every three or even fewer inhabitants. It is not certain that all the daily newspapers in the United States would show so large a circulation per capita as do alone the four leaders in France.

The French are a wise and a reflecting people. That is why they read so many dailies. The proof of this may be found in the character of the newspapers they chiefly read. Not one of the four leaders is either Red or especially yellow. All carry quantities of the most genuine kind of news, that interesting by its public and sordidly small compass for features entertaining by that interest by its public reason of actual grace or cleverness.

All this though France is preponderantly a rural nation, though newspaper display advertising, an essential of American life, has never developed there, and though they have more illiteracy than a great part of our own country. When Americans read a newspaper to every three or four inhabitants we shall have less wild-eyed folly mixed in with the naturally sound quality of American judgment. Until then, as enlightenment spreads, the country, and above all its mental metropolis, will offer the greatest field for sound journalism that can well be conceived.

## The Duties of a Back Tender

By PAUL SMITH.

This is the second of a series of articles by Mr. Smith in the "Paper Industry." A similar one on the duties of the machine tender was printed in the Pulp & Paper Magazine for Oct. 16.

The back tender is the machine tender's assistant. As in the case of any assistant, his success depends upon the amount of assistance he is able to render, and time he devotes towards acting as the understudy for the machine tender's position.

It is not likely that a back tender who lacks the initiative and ambition to understand the machine tender, and be an assistant in fact as well as in name, can be very successful in training the third, fourth and fifth hands so as to form that well-knit, self-reliant organization which is absolutely essential for the operation of a paper machine with the highest degree of efficiency and smallest amount of effort.

By performing as many of the machine tender's duties as will be compatible with the accomplishment of his own work, the back tender will be enabled to acquire the knowledge necessary to make him fully qualified for advancement whenever the opportunity presents itself. This will allow the machine tender to devote more time to the inspection, supervision and perfection of the machine and the machine crew organization.

### The Two Essentials

It is clearly seen then, that the most important essential for the success and advancement of a back tender is to display the necessary "pep," and develop an intimate knowledge of the machine tender's duties so that in case of any troubles or accidents, he may have the confidence to jump in and overcome the difficulty without first calling upon the machine tender for assistance.

The second essential in order of importance is the training of the balance of the machine crew, consisting of the third, fourth and fifth hands, in the performance of their duties, so that the work may be accomplished with speed and precision, without unnecessary bustle, noise and confusion. This will lighten the back tender's burden of responsibility, and give him more time and opportunity to assist the machine tender.

### The Training of the Crew

The training of the third, fourth and fifth hands in the performance of their duties, with "pep" and self-reliance, can be accomplished much more readily by establishing an example for them to follow, as it cannot be expected that the subordinates will perform their duties with any more interest than the back tender displays in the exercise of his own.

Whenever any machine troubles occur, whether they be wire, wet or dryer felt troubles, or in the case of wire and felt replacement, the back tender should be ready to perform as much of the work as possible, or as much as the machine tender may see fit to trust him with, in consideration of the back tender's previous experiences and the ability or dexterity exercised on previous occasions.

### Wash-up

Whenever a wash-up is necessary, the washing of the felts will be under his direct supervision, so that the responsibility for the degree of cleanliness obtained and the speed with which it is accomplished, will rest upon him. At the same time he should assist

the machine tender in cleaning the wire, suction boxes, presses, etc., from the accumulation of pitch or other foreign matter.

When pulling out felts, he must be sure that he does not stand in front of the press, nor let the third and fourth hands get into that position, as it is very dangerous, as one may be drawn into the press by the felt, causing serious injury.

### Breaks

Whenever a break occurs at the couch or any other part of the wet end of the machine, it will be his duty to see that the third, fourth and fifth hands are at the stations assigned them, so that they may be ready to receive the sheet, after he has passed it over the dryer, so that the smallest amount of time may be lost and the smallest amount of broke produced in starting the sheet on the reel.

The regular routine duties of a back tender, beginning with starting up after a shut down period, as for instance on a Monday morning, are as follows: To assist the machine tender in starting the wire and letting down to the correct level the three press rolls.

### Leading the Sheet Through

Inspect the felts closely for any defects; examine the seams and then start them up, turning the showers on wet felts to wet them down thoroughly. After this the showers should be turned off, the felts stretched out, and dried until the right amount of suction or capillarity has been attained, meanwhile regulating the temperature of the dryers so that it will be high enough to dry the sheet properly.

After the machine tender has succeeded in bringing the stock onto the wire, the back tender leads the sheet through the presses, and over the dryers. In this operation he should concentrate his mind on what he is doing and exercise great care in throwing the sheet into the presses so that his hand does not get too close to the press, nor get caught by the dryer felt while he is leading it over the dryers. At this point he should examine the sheet to see if the dryers have evaporated enough water to dry the sheet to the extent desired; if so—he leads the sheet over and through the calendar stack, and starts the sheet on the reel.

### Calenders

He then adjusts the leverage on the calendar stack so as to give the sheet the amount of finish called for on that particular run; sees that the air is turned onto the stack in enough volume and at the correct angle so as to insure against any soft places appearing in the reel; makes sure that the calendar stack is kept well oiled, so as to prevent the calenders from slacking back as this causes the greatest amount of calendar cuts, the worst defect that can be met with in paper and a serious injury to the mill's reputation.

He must see that the doctors on the calendar stack are always kept clean, so as to prevent any accumulation on stack under the doctors, as particles dropping off the doctors and onto the calendar rolls will cause calendar spots in the sheet. This is a very unsightly defect which is sure to bring objections from the consumer, and if they should be torn out and splices made there would result an excessive amount of lost time and broke.

### Defects In Reel

The sheet leading up to the reel must always be drawing tight, to prevent any slack paper being wound up on the reel; this would result in the winding of a soft roll, winder creases, side slips and excessive broke.

the second slitter hands, or any other defect in the sheet, should see to it that a marker is inserted in the reel so as to bring it to the attention of the third hand that a cutout and splice must be made at that point.

#### Uniform Weight

At least one sample sheet is taken from each reel and weighed, to enable him to keep close check on the weight, notifying the machine tender immediately in case of any variation so that it may be corrected at the wet end of the machine.

When the reel has been run up to the correct diameter, change the sheet to the next reel, and have the full reel removed to the winder so that the winderman may be enabled to keep up to the full capacity of the machine, and prevent the accumulation of full reels at the winder, which may perhaps result in causing a shut down to catch up.

#### The Rewinding

Examine the slitters to see if they are in condition to make a clean cut, and that they are set at the proper intervals apart to insure the production of rolls that are of the exact size ordered. Be sure that the winderman starts the sheet tight on the core, so as to prevent the roll from side-slipping and yielding a humpy roll or one with a loose core in the roll, as this gives trouble in the press-room where it will side-slip while they are running it on the press.

Instruct the winderman as to the diameter of the rolls, and see that they are not oversize, watch closely the operations of the third hand while making a splice, giving any advice or assistance that may enable him to acquire the necessary knack and proper co-operation with the fourth and fifth hands to produce a perfect splice. See to it that the splices are made as often as is necessary and that he designates them in the roll by inserting the customary flag at both ends of the splice.

#### Weighing the Product

Supervise the weighing of the rolls by the third hand, so as to insure the correct weight on the roll, and keep a record of the number and weight of each roll so as to have a correct concise record of the roll numbers, and the tonnage produced during your tour of duty.

Be sure that all broke, glass, dryer spears and wood are kept off the floor not only for cleanliness and appearance, but for the safety of life and limb, as many serious accidents are caused by having rubbish lying around the machine room floor.

#### Control of the Crew

Having direct control and supervision of the third, fourth and fifth hands, the responsibility must necessarily rest upon the back tender to train and direct properly their efforts. He should place them at certain stations where from his judgment and experience they may best perform their various tasks with safety, and where they will be of greater assistance to him, and to each other whenever occasion is needed for quick thinking and fast movement.

Congratulations to "Old Man Ontario." The recent election did a fine job in showing what the intelligent voters of a great Province think of a dirty business.

Let public spirit and public sentiment back the public decree to keep liquor out of people's stomachs. Alcohol is a good fuel, but a poor food.

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- U.S. Patent 838,785
- 845,790 } Isaacs, 1906.
- 848,746 }
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- 21,744 Gardner, 1896.
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- Journal of Biological Chemistry.
- Journal of Physical Chemistry.
- Journal of the American Chemical Society.
- Technical Bulletins of the New York Agricultural Experiment Station.

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\* Contains information on casein glues.

## BRITISH TRADE NEWS

### Newsprint Helps Kill Great Strike—Position of the Germans.

After an exciting week watching a great railroad strike being smashed, I suddenly found myself in the office of a Government official who has just returned from Leipzig, where the Germans held a fair in September last. I told him that the "Pulp and Paper Magazine," of Canada, wanted to know something about pulp and paper in Germany.

He replied: "Germany is making great strides to recover her position—and she will—in the great markets of the world. Pulp of all descriptions is on the scarce side and consequently for some time to come Canadian paper makers need have no fear of German competition, neither need the British. When I visited the Leipzig Exposition there was a notable absence of paper and its raw materials. There was a small show of stationery. They want pulp, and great strides are being made to get it. The whole fair showed the desire of the Germans to work. At present export and home orders only amount to 33 per cent of the output of a low grade."

### The Great Strike.

The strike on the railroads of England, Scotland and Wales paralysed the industries of the United Kingdom. In my notes in August I predicted what was in store for the country as a whole, as my information came from an authoritative source, and when the crash came to readers of the Pulp and Paper Magazine it must not have been unexpected. To fight the strike the Government brought into use all the available motors and motor-cars, military and otherwise, to run foodstuffs into different centres by road. As may be expected the executive scheme was a great success. Only those who served in France and Belgium during the war when the enemy was pushed over the Hindenberg line, can realize what motor transport is able to achieve. Perhaps no one knows the success of motors on road work as well as the Canadian Bridge and Railway Engineers, who did such gallant service on the retreat, and it was this self same service and system this week smashed up the railroad strike, which was as complete and as well managed a workers' fight as I have witnessed during the past 40 years. It was so complete that industries would have been shut down in two weeks or when their raw materials ran out. The British export trade received a rude shock and it cannot afford it after the past war experience.

### How Newsprint Fared.

Two days before the railroad strike the owners and managers of the great London daily and weekly papers held a quiet conference in the "street of adventure," known as Fleet Street. Their object was to get their papers north, south, east, and west, to their subscribers and readers. They decided without much delay to call in a great fleet of motor-cars, steam tractors. This was accomplished and the sight in newspaper land at night was one never to be forgot. One section of the motor-transport was engaged for dealing with the supply of newsprint. Stocks, of course, were in to last a couple of days, but after this period stocks had to be replenished and the paper mills selected for such replenishment. With the greatest rapidity and precision the newsprint was whizzed into the offices, sometimes during the early hours of the morning under cover of darkness, and when it was converted into the two-cent or four-cent

newspaper, invaluable to civilization, another section of the motor transport whizzed out of the city of London to all parts with supplies. Newsprint played a great part in this great strike. It kept up the morale of the people throughout the country. Without newsprint there would have been no morale but chaos. It has been a great win for newsprint and the millowners. And prices of newsprint are now unchanged.

### Conditions in England.

Just before the great railroad strike conditions prevailing in pulp circles in London and the North were all that one could desire. Business was speeding up. Then came the strike and, of course, to buy pulp without a railway to transport it across—and all motor cars with the Government—would be too much of a good thing. As I write business is looking up again, but prices are difficult to gauge.

In the paper world mills had to go cautiously as there was no means of getting an extra supply of pulp and no means of getting paper away from the mills. The strike ended yesterday, and agents and mill owners are now busy getting their affairs put right again.

Dock congestion is being relieved this week by a great number of the motor-cars used in helping break up the strike.

Everything augurs well in the near future for pulp and paper here. I see a rosy time ahead for mill men and pulp men.

### At Leipzig.

The London "Star" had a representative at Leipzig investigating the condition of things over there for his paper, and he writes: "Paper—Articles available to any extent were art prints of every description, and writing stationery. Production generally is much restricted owing to lack of raw materials."

He also writes: "It was reported that German labor is now being paid from 200 to 300 per cent more than pre-war rates for an eight-hour day as against generally a ten-hour day in the past, in return for which labor does about two-thirds as much work. Lack of food and the high percentage of war cripples contribute in part to the drop in output per man."

### HOW MANY WOULD YOU BUY?

If a prominent Canadian bank announced in the newspapers and elsewhere that from next Wednesday it would pay interest amounting to 5½ per cent on all its \$50 bank notes in the hands of the public, how many of these notes would you rush to get your hands on before the week was out?

If the Dominion of Canada issued \$50 notes with the greater security of the nation behind them, and announced in the newspapers and elsewhere that it would pay interest amounting to 5½ per cent on all the notes in the hands of the public after this week, how many of these notes would you rush to get your hands on before the week was out?

As remarkable as this may sound, it is actually what the Dominion of Canada is doing. Why not ask your banker or broker to show you where the notes can be obtained?

S. S. Carvalho, known as America's foremost newspaper executive has expressed the opinion that 3c. dailies and 10c. Sunday papers, with substantial increases in advertising rates, are the only solution to the publisher's paper problem.

**A NEW SULPHITE MILL FOR NEWFOUNDLAND.**

A group of Norwegian capitalists have made arrangements for the erection of a sulphite plant, using the mitscherlich process, near Gambo at Bonavista Bay. It is proposed to erect a first unit of 10 tons and perhaps later on increase this to a capacity of 100 tons and possibly also erect a paper mill. It is not likely that construction work will begin until next spring, but it is expected that the mill will be in operation during the spring of 1921.

Capt. C. W. Storm is looking after the company's interests at the present time and he has succeeded in obtaining all the money necessary for the erection of the plant and for the purchase of the property. The necessary capital has all been subscribed in Norway and the headquarters of the company will be in that country.

G. D. Jensen Co., sulphite mill engineers, New York, will do all the engineering work in connection with the plant. Mr. C. D. Jensen has recently returned from Norway in connection with the project.

Mr. Jensen states that the company controls about 750,000 acres of woodland on the Terra Nova and Gambo Rivers. It is estimated that it contains about 4,000,000 cords of pulp wood and sawlogs of which 90 per cent is spruce and 10 per cent balsam. There is also some pine on the property. The company also controls about 20,000 h.p. waterpower on the Terra Nova and Gambo Rivers. Shipment of the product will most likely be made by water.

A short while ago Capt. Storm made a very complete cruise of the timber limits before going to Norway for

subscriptions and his report is exceedingly favorable to the successful future of the mill from the point of view of timber supply. The two rivers mentioned are nearly parallel and not very far apart. Both of them widen out into lakes which can easily serve as timber and water storage. With the mill on the Cove at the mouth of the Gambo River it would not be a very great undertaking to bring wood by water from the mouth of the Terra Nova or by rail from the foot of Terra Nova Lake.

It is the intention of the new concern to make only the highest grade of pulp and apparently the mill would be competing with their countrymen in Norway for the British and American markets.

**TO INCREASE PRODUCTION.**

The Paper Trade Journal prints the following question and answer: I want to get more production, but at the same time I must keep the quality of my paper up to standard (high grade book). What steps should be taken to accomplish the desired result?

Naturally, the first thing to consider is your beating and refining capacity. We will say that you desire to increase your production 50 per cent. If your beating and refining engines are taxed to the limit on your present production, this means that you must increase your beating and refining capacity, either by more beaters and another Jordan if your engines are satisfactory, or by replacing them with more efficient engines, and of course the additional power required must be figured in. This is the first step and is absolutely necessary if quality is to be maintained.

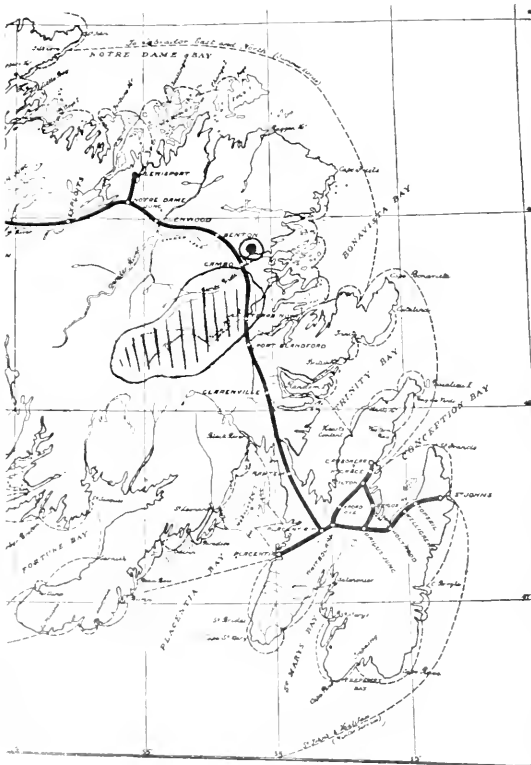
Next you must look into the capacity of your stuff pumps and see to it that they are ample to handle the increased amount of stock. Now we come to the paper machine, the first thing we strike are the screens. Here you must decide if your screens are capable of handling your increased production. If they are not, then you must get another screen or replace the present ones with a larger and more efficient type. Keep the increased power required in mind all the time.

Now we come to the Fourdrinier. The chances are that you are using it to the limit now, so you must figure on lengthening your wire enough to give you at least four more feet of forming surface for your paper.

If you are using less than four suction boxes you must consider installing one or two more. You must get more tube rails for the longer wire, and figure on having adjustable rails and breast roll, so you may give your wire more of a pitch to allow for the increased speed.

Another question to be well considered at this point is the choice between a couch roll and a suction roll. You should have enough wet presses to remove the last drop of water from the paper that is possible by pressure. This is very important, but, not more so than having a sufficient number of dryers to enable you to dry your paper as slowly and gradually as you have been doing. This is absolutely necessary in order to keep up quality. No matter how good the composition of your paper is or how perfectly it is formed, the minute you start forcing the drying operation, then is when your quality will go down.

To sum up: The most important points for consideration are: Greater capacity in beaters, Jordans, stuff pumps, screens, forming surface on wire, pressing, drying and adjustment of the pitch of wire and increased power.





## THE DECAY OF PAPER

No one can live many years in India without observing how soon old newspapers turn yellow and become so brittle as to be useless even for making a parcel. Ordinary note paper and foolscap suffer in the same manner, and it is probable that war prices have brought on to the market still worse qualities that in less time than usual will prove worthless. Much of this paper is used for ephemeral purposes and finds its way promptly to the waste basket, but some of it must have been used for books and documents of permanent value that involve serious risks of loss by decay. Legal documents, plans and drawings, pictures and books of lasting interest have been prepared on paper whose price alone should have condemned it. The principal enemies of paper are insects and oxidation due principally to chemicals that have been allowed to remain in the pulp, and whose destructive action is increased by heat and moisture. Among the insects most active in the destruction of paper are the cockroach, the silver fish and the weevil. Rats and mice will also destroy paper, not as food but to prepare or line nests. The better the quality of the paper the more readily it is attacked by vermin, and the more it contains of chemical or mineral matter the more it is liable to decay and discoloration.

Really good and pure paper will last for centuries. It was made in China at a very remote period and was found by the Arabs when they captured Samarkand in 704 A.D. It then spread through Damascus into Europe, and many documents still exist dating from the 9th century. Paper was manufactured in Spain during the domination of the Moors from whence it was first exported to England. It was made from pure cotton, and the absence of adulterants is the chief reason for its durability. The growth of the paper trade was a serious check on the manufacture of parchment which had hitherto been used exclusively for books and law documents; fortunately for the latter purpose the conservatism of the lawyers preserved the trade from extinction. It is possible to protect all kinds of paper from vermin by surrounding it with a poisonous or intoxicating atmosphere such as is produced by naphthalene in a closed box or chamber or the vapor of petroleum or similar spirit; but, as this vapor is inflammable and in certain states explosive, it must be used with due precaution. For example, a sponge soaked in petrol and placed in a dish within a closed box or cupboard would evaporate slowly and produce an explosive mixture of air and petrol vapor. The naphthalene is not so dangerously inflammable, but the sulphur contained in its vapor, while driving off vermin, attacks and blackens gold, silver, copper and brass, and is thus destructive to gilding. The lowest classes of paper seem to be immune from the attack of insects owing to their unpleasant taste. The impurities they contain hasten their decay which goes on whether in use or in store; but it will be observed that when exposed to the light the decay is most rapid. It is doubtful if there is any means of restoring documents written on inferior paper. Faded ink may be restored, but paper that has become brown and brittle has already had its organic structure destroyed and is beyond recovery. Copying by photographic processes seems to be the safest and surest method of dealing with valuable documents or prints, a method that avoids all risk of error. The destruction of books by weevils is principally due to the attraction of the paste in the binding, that is not always prepared with a

suitable poison. The size on the surface of cloth-bound books that is so readily eaten off by small brown cockroaches may be protected by a coat of varnish freely diluted in turpentine so as not to exhibit a bright surface. This was found successful by the late M. E. H. Aitken. Acidity in gum or paste is also destructive to paper.

There is one very durable form of paper that seems to have been forgotten at a time when it might have been of considerable use. Paper parchment was patented in 1857 in England; it was made by passing unsized paper through a bath of commercial sulphuric acid diluted with half its volume of water. The bath at 600 deg. Fah., lasted from 5 to 20 seconds, after which it was passed first through water and then through an ammoniacal solution to remove all acid and then washed in water and dried. Paper so treated undergoes a remarkable change; it becomes horny and parchment-like and acquires about five times its former strength. It becomes soft in water although remaining impervious, and is unaffected by boiling. Since the price of tinplate has risen so much, this material seems to offer a good substitute for the manufacture of small boxes such as are used for packing tobacco, drugs and other materials. A waterproof varnish on the outside would preserve the horny rigidity of the parchment and also close the lid effectively. It is not even now too late to test this material for which all the ingredients are produced in India.—The Indian Textile Journal.

### MR. MARTIN'S RALLYING CALL TO THE TRADE.

John Martin of Winnipeg, President of the Canadian Paper Trade Association, has sent an interesting letter to the members of the association in which he says: Having had placed on me the responsibility of assuming the Presidency of the Canadian Paper Trade Association, I wish sincerely to acknowledge the honor I have received at your hands. I am deeply sensible of the tribute that you have paid me and it seems hardly necessary for me to add that I shall do everything in my power to further the best interests of our Association.

It seems to me that the greatest measure of benefit will come to the organization if we will recognize the fact that all matters of mill relations and trade customs, as they come up for individual consideration, from time to time are matters which will affect all the members. This being the case, may I ask you to keep this in mind and when contentious matters arise, have your section refer them to the general secretary so that they may have the proper attention of the Executive, and thus contribute to the general good of the organization as a whole.

There is no doubt but that much good has already been accomplished in the way of better understanding among the members of the trade, and that many former abuses and unsatisfactory trade customs have been practically eliminated. Now it remains for us to continue the good work and bring about still better conditions and closer co-operation.

Our secretary, Mr. Martin of Toronto, hopes to come to Winnipeg soon and we will have the opportunity of going into all matters and keep you fully informed of what is being done from time to time. Assuring you of my desire to help build up in Canada an Association equally as strong, helpful and beneficial as our neighbor to the south of us enjoy.

# New Catalogues and Publications

## THE CONDENSED CHEMICAL DICTIONARY.

For some years the Chemical Catalog Co., of New York have secured a great success in their publication of a master catalog of process and equipment used in Chemical and Metallurgical Industries. This year the company presents a new publication in the form of a condensed chemical dictionary, which will doubtless be as welcome to the many industries and persons connected with this important branch of science as the catalog has been. The new book has grown out of the service of the information bureau that the Chemical Catalog Co. has maintained from the start.

It would be impossible to devote the number of pages to a description of the dictionary which its character would warrant. A few of the more important features only can be touched upon, and these are best illustrated by quoting one or two items from the book which are of interest to pulp and paper makers. The book is cross-indexed throughout. In addition to the information that is given, the service department of the Chemical Catalog Co. is still in good working order and is ready to answer questions and give information which has been unintentionally or necessarily omitted from the condensed dictionary. Substances produced in the United States are marked with an asterisk.

### COLOPHONY\* (Common Rosin):

Derivation.—A resin obtained by the distillation of turpentine oil from crude turpentine.

Constants.—Specific gravity 1.08; melting-point  $100^{\circ}$ — $140^{\circ}$  C.

Grades.—“Virgin”; yellow dip; hard. Rosin is graded B, C, D, E, F, G, H, I, K, L, M, N, W-G (window-glass), W-W (water-white). The grading is done by color, B being the darkest and W-W the lightest rosin. Ordinarily the first three grades B, C, and D are not separated. Occasionally (e.g. in the case of rosin used for shrapnel) factors other than color are considered in the grading, such as the acidity and the melting-point.

Contains.—Barrels.

Uses.—The darker grades, B, C, and D are used for making rosin oil, and also in the manufacture of linoleum and dark varnishes; E, F and G (especially F) are used for making size for the paper industry; the grades G to K are used in the manufacture of soap, depending on the quality of the soap being made; for some fine soaps even lighter grades are occasionally used; the grades higher than K (especially W-G and W-W) are used for making light varnishes; sealing wax; munitions (shrapnel); adulterating other resins; fastening outlery into handles; increasing the friction of the horsehair of the bows of musical string instruments; soldering flux.

Fire hazard.—Dangerous.

Railroad shipping regulations.—None.

SODIUM SILICATE\* (Soluble glass; water glass) (a)

$\text{Na}_2\text{SiO}_3$ , (b)  $\text{NaSiO}_2$ ,  $9\text{H}_2\text{O}$ , (c)  $\text{Na}_2\text{Si}_2\text{O}_7$ .

Color and properties.—(Water glass) White to gray-white lumps or powder.

Constants: (a) (b)

Melting-point. . . . .  $1018^{\circ}\text{C}$   $48^{\circ}\text{C}$

Boiling-point . . . . . Loses  $6\text{H}_2\text{O}$  at  $100^{\circ}\text{C}$

Soluble in water and alkalis; insoluble in alcohol and acids.

Derivation.—Silica (quartz), calcined soda and powdered coal are heated together in a crucible, the molten

mass is powdered when cold, is extracted with water and steam in an autoclave, followed by evaporation of the water.

Method of purification.—Fusion and passing in a current of air.

Impurities.—Sodium sulphide, iron.

Grades.—Pure crystal; crude lumps or powder; also marketed in form of solutions of various concentrations ranging from viscous semi-liquids to thin watery fluids.

Containers.—Wooden barrels; tins; glass bottles.

Uses.—Fireproofing fabrics; manufacture of corrugated paperboard, mailing tubes, veneer products, etc.; grease-proofing paper containers, etc.; manufacture of cements; concrete hardeners, etc.; manufacture of paints; filling for soap; cementing stones; water-proofing walls; in hydraulic and acid-proof mortars; dyeing and bleaching; cottonseed oil refining; cementing pipe insulation; preservative for eggs in medicine; for fastening splints; manufacture of abrasive wheels, stones, etc.

Fire hazard.—None.

Railroad shipping regulations.—None.

There are a few places where the Pulp and Paper Industry seems to have been overlooked, though there may be good reasons for apparent omissions. We refer to such substances as lime, limestone, sulphur, bleaching powder (calcium hypochlorite), sodium sulphate and sodium carbonate. All of these find extensive use in the manufacture of pulp or paper, or both, and no mention is made of such uses except the inclusion under sodium carbonate of paper making. This is the only criticism we have to offer, and it is given as a suggestion intended to be helpful. The information given in the book is really excellent and cannot but be exceedingly useful to chemists, purchasing agents and many others.

## Colors for Paper.

The National Aniline & Chemical Co., of New York, which has branch offices in Toronto and Montreal, has just distributed a new catalog in the form of samples showing specimens of paper dyed in various colors and shades by the different classes of dye stuffs at present manufactured by the company. A convenient feature of the specimens is that they are made with 5, 10, 20 and 40 pounds of color per 1,000 pounds of dry stock so that one can easily calculate the amount of dyestuff that will be required for almost any shade.

The following paragraphs taken from this catalog will be of interest in presenting some of the characteristics of the three principal classes of colors at present used in the dyeing of paper stock. Some details of their use are also given.

The general characteristics of the colors comprising the three groups, and the grades of paper for which each is best suited are briefly indicated as follows:

I. Acid Colors.—This group includes a comprehensive range of bright colors of good fastness to light. In general, acid colors are better soluble than basic colors, but on the other hand they possess less tinctorial power, and less affinity for vegetable fibres.

Acid colors are used only for sized papers. The color is added to the pulp in the beater before sizing, and is thoroughly incorporated with the material; the size is then added. For heavy shades a strong sizing of the pulp is indispensable.

Because of their slight affinity for vegetable fibres,

acid colors produce very level dyeings on mixed pulps, and are furthermore particularly suited for the production of light shades.

**II. Basic Colors.**—These colors possess great tinctorial power, and, as a class, are very brilliant in shade. They are inferior to the acid colors in fastness to light, and require a little more care in dissolving.

The basic colors possess great affinity for pure vegetable fibres, which ensures a very good absorption of the dyestuff, even in the case of papers which are only slightly sized. This property, however, frequently leads to the production of mottled effects when dyeing mixed pulps because of the selective action of the color on the various fibres. Ordinarily by a judicious blending of basic and acid or direct colors perfectly uniform shades can be produced even on mixed pulps. Level dyeing is also promoted by adding the required amount of alum in two portions, a part being added before the dyestuff, and the remainder after the addition of the rosin size.

China clay and other loading materials fix basic colors readily at slightly elevated temperatures. For unsized papers, and when producing mottling fibres, the material is first mordanted with some tannin matter, (tannic acid, sumac extract, etc.).

**III. Direct Colors.**—These colors come into consideration particularly for the dyeing of unsized pulp containing principally cotton and similar fibres, i. e., in the production of blotting and copying papers, and for the mottling fibres. Direct colors possess affinity for practically all various materials used for paper making, and in conjunction with suitable acid colors, are very useful for the production of level dyeings on mixed pulps. In almost every case direct colors exhaust completely leaving an entirely clear baek water. The dyeing is added to the beater, and the engine allowed to run until the dye is uniformly mixed with the pulp. For medium and heavy shades it is an advantage to add 5-10 per cent common salt, and to heat the pulp to 105-120 deg. F. As a class, direct colors produce dyeings faster to water than those produced by either acid or basic colors, and with few exceptions, excel the latter in fastness to light.

The paper samples shown in this card were made on a laboratory scale, therefore allowance must be made for the appearance of the surface. The patterns serve to illustrate the shades obtained with the various colors listed. In each case the weight of the color given indicates the amount to be used for 1,000 lbs. of dry stock. The material used was unbleached sulfite pulp; the sizing agents, ordinary rosin soap and alum. Special data regarding dyeing of individual colors is given where necessary.

#### **Rumsey Pumps.**

The Rumsey Pump Co., Ltd., Seneca Falls, N. Y., has sent out Bulletin DC-18, describing their hand and power pumps. These are made in sizes from 13 to 1,000 gallons per minute and appear to be a very compact and convenient type of pump. The fibre pumps are built for pressures up to 100 pounds. The various pumps are driven by hand, belt connected, or directly, geared to electric motors.

#### **Sherwin Williams Color Catalog.**

The Sherwin Williams Co., prepared an attractive leaflet for distribution at the recent Exposition of Chemical Industries at Chicago. It is entitled, "Four Years of Achievement," and describes the strides that have been made by this company in a number of lines

of interest to pulp and paper manufacturers. These include the various lines of paint that have been for years the main products of the company and also the important products in the dyestuff field. In the latter the company is making a large number of its own intermediates as well as a large number of colors for use in the manufacture of paper as well as for the associated industry of printing in the form of ink colors. The company employs a technical staff whose knowledge and experience in the use of dyes and other products of the company are at the service of their customers and friends.

#### **Fibre Recovery by Flotation.**

At the National Exposition of Chemical Industries at Chicago a demonstration apparatus showed the principle of the process employed by the Groch Centrifugal Flotation Limited of Cobalt, Ont., as applied to the recovery of fibre from the waste water of pulp and paper mills. The idea is to introduce air bubbles into the bottom of the waste water tanks. A descriptive leaflet will be sent on application to the company.

#### **Weber Chimneys.**

Catalog No. 19 of the Weber Chimney Co., Chicago, describes, with illustrations showing the structure and the various stages of construction, the manner in which conical concrete chimneys are built by this company. Some of the illustrations are taken from pulp and paper mills. The highest chimney in the world, which was built for a Japanese Copper Smelter by this company, is 570 feet high.

#### **Noble & Wood Machine Co. Catalog.**

The most extensive and attractive paper machinery catalog that has been received in some time has just come from the Noble & Wood Machine Co., Hoosick Falls, N. Y. This contains about 200 pages in a stout loose leaf binder into which additional pages can be inserted from time to time.

With the catalog comes an invitation for paper mills to send in the names of engineers, purchasing agents or others interested in such information as may be obtained from the catalog so that a copy may be sent. It is requested that the position occupied be given for the men whose application is thus sent in.

The foreword says: "In the catalog will be found a very complete line of the auxiliary machinery required in the modern paper mill. We do not build the paper machines and by auxiliary machinery we mean the machinery which prepares the stock for the machine itself. You will find a most modern and complete line of Beating Engines, Jordan Engines, Board Machines, Stuff Pumps, Stuff Chests, etc., described and illustrated. We wish also to call your attention to our very complete line of Experimental Paper Making Machinery which will be found toward the back of the book."

#### **Bondite.**

This material, which is described in a 12-page pamphlet, and which is supplied by the Rathburn Company, El Paso, Texas, is a special grade of furnace cement. In addition to describing this particular material the pamphlet contains considerable useful information on the function of cement in setting up furnaces and boilers together with tables showing the working temperatures of various types of furnaces, approximate temperatures corresponding to easily recognized colors of fire brick when heated, and the heat loss and other data corresponding to different percentages of carbon dioxide in flue casts.

### A. P. & P. A. HOLDING FALL CONFERENCE.

The general idea has been throughout the country and the constant agitation of questions affecting employment relations, most of which are discussed from the standpoint of expediency rather than of underlying principles of economics and justice, make opportune the report and discussion on Industrial Relations, which will be brought to the Business Conference of the American Paper & Pulp Association at the Waldorf-Astoria, on Friday, November 14th. The relation of the American Paper & Pulp Association to the National Industrial Conference Board, which has taken such prominent part in the study of these matters and which has been recognized as the scientific body representing the employing interests of the country, will make a recital of the situation from the broad-minded employer's standpoint of intense interest and value to our industry. There has been some misinterpretation of the attitude of the employer group at the recent Industrial Conference at Washington and it is expected that there will be present gentlemen of national reputation who participated in the Washington conference, and who will give first-hand and correct information of this attempt to clarify the issues that underlie sound employment relations.

This one feature of the Business Conference alone would warrant the attendance of every manufacturer in the country and it is hoped that the entire industry, without reference to membership in the American Paper & Pulp Association, will endeavor to attend the luncheon at the Waldorf on Friday, November 14th, at 1 p.m.

### A Real Forestry Policy and Program.

Probably no convention of the pulp and paper interests of this country ever met under circumstances of keener interest or with wider appreciation of the importance of the principal topics of discussion and study that will be the features of the program at the Business Conference of the American Paper & Pulp Association at the Waldorf-Astoria in New York on Friday, November 14th.

Events in this industry and the general industrial situation have brought sharply to the attention of practical men the necessity for immediate and exhaustive study and consultation to the end that some sound conclusions may be reached that will lead to unity of thought and action.

Among these topics is the ever pressing one of the future raw material supply for paper making. While many experiments have been made with various other fibres, nothing has yet been found that in any way can compete in cost for large units of production with wood fibre, and the rapid depletion of our forests under the great demand for paper has focused attention upon the question of a National Forestry Policy looking to the perpetuation of our forest supplies and their economic use. This is a matter in which the paper mills not only, but the publishers and the general public have a common interest.

In recognition of this situation, a good deal of time will be given at the Business Conference to the presentation and discussion of a suggested National Forestry Policy which will reflect the careful views of the best minds of the paper industry and which, it is believed, offers the best solution and hope for the perpetuation of all interests involved. Probably 90 per cent. of the pulp and more of all paper produced in the United States, including paper board, is the product of wood,

so that every paper manufacturer, whether a producer from his own timber, purchaser of pulp wood or simply a converter of pulp into paper, must realize his economic relation to the topic.

The Empire State Forest Products Association holds its annual meeting at the Waldorf on Thursday, November 13th, and there will be present for the discussion on Friday, probably the best representation of all interests involved that has ever been gathered for this purpose.

### NEW YORK MARKET ITEMS.

**GROUND WOOD**—Steadily acquiring strength, the market for mechanically ground wood is daily working into a firmer position, and all manner of prices are being named as having been paid, with the result that it is difficult to say just what definite market values are. No. 1 spruce ground wood has been sold at \$40 per ton at grinding mills, and it is understood on high authority that \$50 a ton delivered consuming plants has been realized, which might work out at a price equivalent to better than \$40 at the shipping point. Demand from all quarters is brisk and producers assert that they are unable to satisfy the wants of buyers, in view of which it is but logical that prices tend so strongly upward.

**RAGS**—The rag market is far from strong, yet there is a steadiness of tone which seems to foreshadow a firmer market once demand for consuming mills broadens to a more normal scale. This apparently is due more to the strength in low grades of material such as are used by roofing felt manufacturers than to any other single cause, and dealers contend that with prices holding their own under the prevailing restricted movement of supplies toward mills that the probabilities favor a sharp advance in values when manufacturers resume purchasing in larger volume. Roofing rags are freely sought by felt mills and sales are numerous at a price basis of between 2.70 and 2.80 f.o.b. New York for No. 1 packing. Doubtless the holding up of deliveries of foreign rags by the longshoremen's strike stimulates demand for domestic roofing material, as consumers are obliged to buy additional amounts of rags although having large quantities on the docks at this port or in vessels in New York harbor.

**PAPER STOCK**—Trade in the cheaper grades of waste paper regulars the market. Board mills are purchasing in regular fashion and dealers and packers tell of experiencing little difficulty in finding an outlet for all the mixed paper and folded news they have for sale although it is said in some quarters that manufacturers are endeavoring to reduce prices. There is also a steady call for over-issuance newspapers, kraft paper and the lower qualities of manilas. Folded news is quotable at 85 to 90 cents per 100 pounds New York and No. 1 mixed paper at 75 to 80 cents. Kraft of No. 1 grade is selling at 3.25 cents and over-issuance news at 1.20 to 1.25 cents. High grades are in limited demand and prices are merely holding their own. Hard white shavings of No. 1 quality are quoted at 5.25 cents and No. 1 soft white shavings at 4 cents. Books and magazines are mainly neglected and mills are frequently turning down offerings of stock at 2 cents f.o.b. New York, although the bulk of business going through is at this price basis. The printers' strike locally has materially curtailed production of the better grades of old paper but the fact that mills are holding off in buying these descriptions offsets the reduced supply.





# UNITED STATES NOTES

The American Writing Paper Company, in connection with a campaign it has just inaugurated in its plants at Holyoke, Mass., and vicinity to check avoidable accidents among its employees, has issued a safety first circular in which it is pointed out that a classification of accidents at the various plants during the first seven months of the present year, indicates that 70 per cent of the mishaps have been caused, not by defective or unguarded machinery, but by simple carelessness. In the company's instructions to its employees the latter are informed among other things that, "The American Writing Paper Company is safeguarding its machinery in every possible way. It asks its employees to co-operate in eliminating unnecessary accidents. Remember that mechanical devices, systems, and rules for the prevention of industrial accidents avail nothing without human caution." The company has established first aid hospitals at a number of its divisions all of which are regularly attended by a trained nurse.

New lines of writing paper are soon to be put on the market by the American Writing Paper Company, particularly two lines of shadow-craft papers, one of which will be known as "Bond d' Agigle," made from five grades of Bond and one of superfine, and the other will be a shadow-craft produced by a similar process but water marked with designs belonging to the large consumers of bond paper. The actual grade and substance weight is to be water marked on every sheet. The papers have been standardized in the company's department of Technical control. In order to promote the sales of these grades, which will be manufactured in the Riverside No. 1 division mill, the company has developed a department that will devote its entire time to merchandising these papers. This department will be under the supervision of F. W. Hastings.

More than sixty magazines that have been held up by the pressmen's strike have quit New York City and will be printed in other cities. If these periodicals stay permanently away from New York it is estimated that at least 3,000 striking printers will be without work. In the opinion of the employing printers, most of whom have been forced to suspend publication for more than four weeks since the walkout of the printers, it will be a long time before New York City can regain its position as the periodical publishing centre of America. Arrangements have been made by the Periodical Publishers' Association and the Printer's League to place the business of the magazines driven away from New York in twenty-three cities. The industrial loss to New York is estimated at several million dollars annually. In one way a more central location is desirable on account of the parcel post zone regulations that became effective July 1. Certain publications had already planned to print a part of their issues in Chicago to save postage. Chicago printing houses are ready and anxious to do business with the Eastern periodical publishers. They are, however, not very much disposed to print the magazines on merely temporary arrangements such as have been suggested by some of the publishers. The permanent establishment of headquarters in Chicago and other cities by

the periodicals formerly published in New York will mean more or less change in the placing of paper contracts for these publications. The **Paper Trade Journal**, **Printer's Ink** and the **American Stationer** are three publications devoted to the paper trade and allied industries which have already moved away from New York City.

India has again come into the American market for dyestuffs, according to exporters. Some months ago a restriction making it necessary for the Indian buyers to obtain a license before they could import dyestuffs into India from countries outside the British Empire was adopted by the Indian Government. For a time this restriction caused considerable reduction in the orders from India. Within the past week or two, however, exporters in New York City have received orders by cable for high grade dyestuffs, the Indian buyers stating in each instance that a license had already been obtained. From this it would appear that English manufacturers have been unable to supply the demands of the Indian manufacturer in this respect, and the exporters in consequence expect a considerable business from this source for some time to come.

The Brown Corporation, of Portland, Me. is marketing a creped kraft paper towel. This is a new product and is expected to take well because of the strength and absorbency of the paper.

The big pulp and paper concerns in Maine have piled up reserves at such a rapid rate the past year that, the war being over, the necessity for heavy reserves no longer exists, and this winter they will curtail their output 50 per cent or more. The Great Northern Paper Company has so much wood on hand that it will cut only 60,000,000 or 70,000,000 feet this winter, compared with an average of 120,000,000 feet.

## TRIBUTE TO LLOYD HARRIS.

Referring to the dinner recently tendered to Mr. Lloyd Harris, the Times pays a tribute to his remarkable work as chairman of the Canadian trade mission. He has "carried the Canadian trade banner and hoisted it in places where hitherto Canada has been but a name," the Times says. "If his success in this respect has been notable his missionary preaching of the gospel of the Empire in the Mother Country has been no less important."

His work, the Times thinks, points a moral for the British Government, its results being precisely those which a department of overseas trade should achieve.

The Times adds: "The Government would do well to study the methods of the Canadian mission, and even better, to call some great business men of the dominions with their virility, energy and enterprise, to assist in a consultative capacity in the vitally important task of developing British trade in fields where they themselves have prospered."

You will find that any great success is mixed with trouble, more or less.

# PULP AND PAPER NEWS

H. L. Wilson of the Wilson Stationery Co., Winnipeg, was in Toronto this week calling upon the members of the trade.

Robert Rolland of Montreal, formerly of Toronto, spent a few days in Toronto recently. He is now in charge of the purchasing for the export paper department of Grace & Co. of Montreal.

W. H. Sherriff of the Hodge-Sherriff Paper Co., Toronto, left last week on an extended selling trip and will go as far as the Coast visiting all the leading cities of the western provinces.

C. N. Ramsay of Ritchie and Ramsay, coated paper manufacturers, Toronto, has returned after spending several months in England and Scotland.

I. H. Weldon, of Toronto, who is a member of the Hartley Bay Hunting Club, has gone on a deer shooting expedition in the French river district. N. L. Martin, secretary of the Canadian Paper Trade Association, is another member of the party and expects to bring back his full quota of deer.

J. L. McNicol, assistant paper controller, Ottawa, was in Toronto recently on his way to Fort Frances and other eastern mills on business.

F. L. Rateliff, of the Rateliff Paper Co., Toronto, was one of the delegates who attended the convention of the Baptist Association of Ontario and Quebec, which was held in Ottawa, and afterwards spent a few days in New York City on business.

Howard Smith, of Montreal, President of the Toronto Paper Mfg. Co., spent a few days in Toronto recently on business.

The Nashua Gummed and Coated Paper Co., Nashua, N. H., who are establishing a branch factory in Peterborough, Ont., are losing no time in getting down to business. The necessary repairs are now being made to the former Cordage factory which the firm will occupy. Several thousand dollars will be spent making the building ready for the installation of the equipment.

A new industry has been established in Deseronto Ont., known as the Quinte Chemical Co., Limited, with a capital stock of \$40,000. Juniper oil will be produced from the juniper bush and berry, cedar oil from cedar wood, and hemlock oil from hemlock wood and bush. The company has a contract for the purchase of all the product that the plant can produce at current market prices. Lieut-Col. George Crawford, of Lindsay, Ont., is President and Treasurer of the company, and George F. Palmer, of Deseronto, Secretary and Manager. The raw material, from which the oils are distilled, is unlimited right at the plant.

Mr. Hudson, of Everett, Wash., was in Victoria, B. C. recently and is contemplating establishing a pulp and paper mill at Squamish, the Coast terminal of the Pacific Great Eastern Railway Company.

J. S. Douglas, who for some years has been business manager of the Mail and Empire, Toronto, has been appointed general manager of the paper succeeding his father, the late W. J. Douglas.

Word has been received in the east of the death of George E. Norris, who was the proprietor of the Nanaimo B. C. Free Press, the second oldest paper in British Columbia. He was forty nine years of age.

Major Daniel Owen recently spent a few days at his home in Annapolis Royal, N. S. He is President and Treasurer of the North American Securities Corporation, with executive head offices in Boston. Branch offices will soon be opened up in Canada and the United States. The first security to be offered to the public will be the South Labrador Pulp and Paper Co. with a capital of ten million dollars, of which Major Owen is President. The company will exploit timber limits recently explored in Labrador by the aerial expedition and a large staff of hydraulic engineers, pupmen and lumbermen have already been retained. It is expected that by next year saw mills will be in operation and that, by the close of the season, a large pulp mill will be located on the property. Several thousand tons of machinery and supplies will go up at the opening of navigation.

The provincial officers of Division "A" of the Canadian Paper Trade Association, which Division deals particularly with printers' papers and stationery, were recently elected as follows: Chairman, John Martin, Winnipeg; Vice Chairman, C. J. Kay, Columbia Paper Co., Vancouver; Secy-Treas. A. C. Hunt, John Martin Paper Co., Winnipeg; Chairman of Committee on Constitution, Fred Smith, Smith, Davidson & Wright, Vancouver; Chairman of Committee on price list policy, W. R. Davis, Barber, Ellis, Davis, Calgary; Chairman of Committee on Manufacturing, John Gibb, Clark Bros. & Co., Winnipeg; Chairman on Committee on Traffic, Wallace Murphy, Barber-Ellis, Winnipeg; Chairman on Committee on Mill Relations, George Wilson, Clark Bros. & Co., Winnipeg; Chairman on Committee on Terms and Credits, D. A. Clark, Clark Bros. & Co., Winnipeg.

A charter has been granted the Specialty Paper Mills, Limited, with headquarters at Camden East, Ont., and a capital stock of \$325,000. The company, which is headed by L. F. Houpt of Buffalo, and others have, as already stated, taken over the plant of the Camden Paper Mills and will operate the same on news. It is understood that the entire product has been sold to a New York firm for a long period.

A. G. Pounsford, general manager of the Port Arthur Pulp and Paper Co., Port Arthur, and Hugh M. Lewis of the engineering staff of the same company, were in Toronto recently on their way across the line where they will visit a number of important plants.

A. R. MacDougall of A. R. MacDougall & Co., Stationers, 474 King street west, Toronto, is in the Old Country on a business trip.

Many friends in the paper trade will learn with regret of the death of Stephen A. Lazier of Belleville, Ont., who passed away on October 31st, in his eighty sixth year. He operated the Lazier Paper Mills at Belleville for nearly half a century making straw, rag and manila

wrapping as well as corrugated paper, carpet lining and stair pads. He leaves a wife, four sons and one daughter. Two of the sons are R. E. and S. D. Lazier of Belleville. In his lifetime Mr. Lazier was identified with a number of other leading industries in and around Belleville such as the lumber, flour, grain, coal and wood.

After nearly half a century association with the Methodist Book and Publishing House, Toronto, James Dale has retired owing to failing health. He entered the service as a boy and for the last score of years has been manager of circulation and advertising for the Christian Guardian and twenty three other publications of the House. A complimentary dinner was tendered Mr. Dale recently by the staff when he was presented with an upholstered easy chair. Rev. Dr. Briggs, Book Steward Emeritus, made the presentation and Rev. S. W. Fallis, the present Book Steward, also added a few words of appreciation of the worth and work of Mr. Dale.

The Kitchener Envelope and Stationery Co. has, as already stated in these columns, begun operations in Kitchener, Ont. and has leased the factory formerly occupied by the Mitchell Button Co. Arthur Boehmer of Kitchener, is the president and general manager of the new organization which starts with bright prospects.

W. G. Rook, who for several years has been manager of the Canadian Home Journal, Toronto, has been appointed manager of Canadian H. W. Gossard Co. Limited, and has entered upon his new duties. Mr. Rook is a former President of the Toronto Ad Club and a widely known authority on publicity.

#### MANUFACTURE OF PAPER FROM BAMBOO IN TRINIDAD.

An important project for manufacturing paper from bamboo in Trinidad is being carried out by an Edinburgh firm of publishers. About 1,000 acres of land near St. Joseph (seven miles from the capital at Port of Spain) have been planted in bamboo, and a concession has been obtained giving the firm the right to cut bamboo from the Government forests.

According to a report by the United States Consul in Trinidad, the firm in question, foreseeing a paper famine throughout the world within the next few years, have been giving serious consideration to the problem of providing adequate paper reserves for themselves for the future; and although realising that paper can be produced from any vegetable material containing cellulose, nevertheless came to the conclusion that bamboo was most suitable for the purpose. They selected Trinidad for their bamboo-paper project, as the bamboo grows there very quickly, having sufficient development within three or four years for making paper.

Experts have been employed to study the question of easily getting rid of the knots in the bamboo, and also of the yellowish-green color that has hitherto been considered a drawback to the manufacture of paper from bamboo. The first experiments in Trinidad with the bamboo consisted of putting the reeds through sugar-cane presses. While this rather crudely accomplished the purpose, nevertheless it was found to be desirable that the bamboo should be shredded as well as crushed, and the knots removed. It is said that a machine has been designed which accomplishes all this, and that a bleach or dye has been discovered

which makes the pulp wood and paper perfectly white. It is understood that the machinery for the bamboo plant, to cost about £30,000 has been ordered from the United States. —Journal Royal Society of Arts.

#### THE BATHURST EXPERIMENTAL FOREST PLOT.

The work on the permanent experimental plot which has been laid out on the Nepisiquit River through the co-operation of the Bathurst Lumber Company, the Conservation Commission and the Crown Land Department of New Brunswick, is progressing very favorably. An area of 490 acres of forest land has been set aside for 25 years by mutual agreement and the Bathurst Lumber Company is cutting this area according to many various regulations and systems laid down by Dr. C. D. Howe of the Conservation Commission with a view to finding out what change may be made in the rate of growth and nature of the reproduction resulting from each of the various methods of cutting. On some of the area all the slash and brush is being burned and all material in the tops suitable for pulpwood is being taken out. Mr. Angus McLean, general manager of the Bathurst Lumber Company, is taking a keen interest in this experimental cutting and thinning and deserves much credit for making possible this valuable experiment even at an increased cost for logging, it being one of the first and most extensive experimental thinnings being undertaken in Canada. Mr. John Lordon, superintendent for the Bathurst Lumber Company, has been in charge of the logging for the Bathurst Lumber Company, and R. D. Jago, of the Forest Service, laid the plot out and has been in charge of the cutting for the Conservation Commission. Mr. Herman Good, a returned soldier who won the Victoria Cross, has filled the position of camp foreman over the 50 men employed in a very satisfactory manner.

Dr. C. D. Howe, of the Conservation Commission, picked out the site for the plot and expects to visit the area for the third time in December, after most of the cutting has been completed.

W. M. Robertson, B. Sc. F., of the Conservation Commission, is in charge of the plot at the present, having relieved Mr. R. D. Jago recently, who had to return to Fredericton.

Mr. F. C. Nunnick, B.S.A., of Ottawa, agriculturist for the Conservation Commission, who has been here several times in connection with the supervision of the classification of the soils on the Crown Lands by the Forest Survey, has gone to Bathurst where he will examine some 15 square miles in different parts of Gloucester County in order to determine whether the lands are suitable for agriculture or not. Mr. Nunnick will be accompanied by Mr. L. S. Webb, of the Forest Service. Before returning to Ottawa Mr. Nunnick expects to spend his holidays in New Brunswick on a big game hunting trip.—Chatham, N.B., "Weekly World."

#### B. C. MAY HAVE NEW PULP MILL.

Mr. Hudson of Everett, Washington, called upon Premier Oliver Oct. 22 and discussed the feasibility of the establishment of a pulp mill at Squamish, B. C., the coast Terminal of the Pacific Great Eastern Railway Company, at the head of Howe Sound.

Mr. Hudson was promised every assistance by Premier Oliver. Details of timber legislation and information regarding water power were furnished by the Department of Lands.





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November 3.—There is an increasing demand for newsprint and the market is still being searched for supplies. Some of the prices which are being offered by firms which have not regular contracts, is almost fabulous provided they can secure spot delivery. It is reported that practically all the leading Canadian mills have their output contracted for several months ahead so far as foreign business is concerned, which includes, of course, the product sold to the United States. Even the five or six hundred tons that will come on the market during the next few months by reason of additional machines being installed by Preece Bros, Abitibi, Laurentide, Spanish River and other concerns will be taken care of at a good figure without any anxiety on the part of the producers.

An interesting report on Canadian pulp and paper in the British market has just been issued by A. L. Dawe, secretary of the Canadian Pulp and Paper Association, who spent several months in the Old Country in the interest of the export trade. He makes some timely and pertinent observations in which he says that the immediate effect of the removal of all trade restrictions from September 1st last was to place Canada in direct competition with the rest of the world and the entire burden of retaining British business secured under former favorable conditions and of making Great Britain a permanent market for their products is placed upon the Canadian manufacturers. He declares that the British market is no place for weaklings or quitters and unless a manufacturer is prepared to stick it out at all hazards he had better not make a beginning. After a number of other observations Mr. Dawe points out that there are in England twelve newsprint mills of importance with a potential production of 450,000 tons annually. The pre-war consumption was over 600,000 tons per annum and this left 150,000 available for Scandinavia, Germany, Finland and Canada and post-war consumption and production will not be relatively different. How much of this excess demand Canada will eventually supply rests entirely with the Canadian manufacturer. Canadian newsprint is undeniably popular with the British pub-

lishers and, in view of the excellent arrangements that have been made by some of the Canadian newsprint mills, the British market should prove of prime importance in the near future.

Mr. Dawe adds in reference to writing and printing papers, that it is doubtful whether any permanent market in Great Britain for printing papers or cheap writing papers is possible, with the exception of specialties and a limited quantity of high grade bond papers. The continued use of hard bond papers is a matter of educating the consumer. An aggressive campaign would no doubt result in a good market for the more expensive qualities of paper.

One Canadian paper representative received a request during the past week from New York for a thousand tons of newsprint to be delivered monthly for the next year and as high as five cents at mill was offered but no contract was placed as the stock could not be secured.

In connection with the pulp outlook it is interesting to note that, according to reports from the S. W. White Chemical Co., active work will be started on the sodium sulphate deposits at Lake Whiteshore near Saskatoon and that its use will revolutionize kraft pulp making in Canada.

The value of pulp and paper stocks continues to ascend and each week sees a strengthening in the figures. Pulp and paper appears to be more and more looked upon as the backbone industry of Canada. American mills are withdrawing their prices all the while and this lends further confidence to the fact that the greatest era of demand and production known in the trade for some years is at hand. Board mills, tissue and toilet mills and coated paper plants are as busy as ever. There is reported a shortage of raw stock for coated board.

In regard to the rag and paper stock the mills are marking time in the buying of all grades of waste paper. They claim to have a sufficient stock on hand to last a few months and can afford to stay out of the market altogether for the present. What buying is done is at the same range of prices as has prevailed for some time and lower in certain cases. Dealers have no large stocks and one representative stated

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES 8311  
8312 MURRAY HILL,  
8313

NEW YORK

Write us when  
you have any  
surplus of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

this week that they had succeeded so far in preventing the tactics of buyers in bringing about a general drop in waste paper prices. Rags are being bought by the mills but not freely. There has been a tendency toward lower prices for about a month but the movement is said to have run its course, and it is expected that quotations will stiffen from now on. The twine market is strong and there has been an advance recently of two cents in finished cotton twines and three cents in unfinished cotton twines.

Deliveries on the cheaper grades of wrappings are reported by local jobbers to be slow and mills are getting farther behind. One firm has advanced its prices to \$6.00 per cwt. in car lots on "B" manila and to \$7.50 in No. 1 manila and fibres, in car lots, to jobbers. The old price of \$5.60 for "B" manila and \$7.35 for No. 1 manila and fibre is continued by other mills, but it is rumored that the figures may ascend in the near future. Natural greaseproof has recently gone up two cents and is now sold at fifteen cents to jobbers. Bleached white glassine is twenty-four cents and No. 2 parchment fifteen cents. A large export trade is being done by the mills which accounts for the advance of one and two cents on these special lines.

It is expected that the Canadian Vegetable Parchment Paper Co. will begin operations in their new mill at St. Catharines toward the end of the year and steady progress is being made in the work of getting the plant in excellent shape. Everything is being done to ensure a high and uniform quality of the product when it comes on the market. M. G. kraft is sold up for months in advance and the unglazed product is also in active demand.

There is a great scarcity of ground wood pulp and prices continue to ascend, as high as forty-five dollars being secured at the mill in some instances. One firm in Toronto paid fifty-six dollars per ton delivered, last week for a few ears. The reason for the sharp advance is due to the activity of all paper mills and the amount of mechanical pulp that is being exported. Ground-wood pulp has, at last, come to its own in the matter of price and many inquiries are being received weekly which cannot be satisfied and producers can get at present almost any figure they ask.

**Rag and Paper Stock Prices.**

	F.O.B. Toronto
No. 1 white envelope cuttings .....	\$4.50
No. 1 soft white shavings .....	\$4.00
White Blanks .....	\$1.70
Heavy Ledger Stock .....	\$2.60
No. 1 magazine .....	\$2.10
No. 1 book stock .....	\$1.70
No. 1 manilas .....	\$2.20
No. 1 print manila .....	\$1.50
Folded news .....	\$1.00
Over issue, news .....	\$1.15
Kraft .....	\$3.50
No. 1 clean mixed papers .....	.90c
No. 1 shirt cuttings .....	14½c to 15c
No. 1 unbleached cotton cuttings .....	12½ to 13
No. 1 fancy shirt cuttings .....	.11c
No. 1 blue overall cuttings .....	.11c
Bleached shoe clip .....	12½c
White cotton hosiery cuttings .....	.13c
Light colored hosiery cuttings .....	.11c
New light flannellette cuttings .....	.11c
No. 2 white shirt cuttings .....	.11c
Grey thirds and blues (repacked), No. 1 .....	4½c
Flock and satinettes .....	\$2.90

Tailor rags .....	\$3.00
Gunny bagging .....	4c
Manila Rope .....	.6c

**Pulp Prices.**

	F.O.B. Mill.
Groundwood pulp .....	\$40.00
Sulphite, news grade .....	\$75.00 to \$80.00
Sulphite, easy bleaching .....	\$92.00 to \$95.00
Sulphite, bleached .....	\$15.00 to \$120.00
Sulphite, bleached .....	\$115.00 to \$120.00

**NEW YORK MARKETS.**

New York, November 1—Although there is no doubt that the demand for some kinds of paper has lost much of the snap that was such an outstanding feature a short while ago, the market as a whole continues in a very firm position and sufficient business is being done to give the situation a fairly active complexion. The strongest end of the market lies in newsprint. Spot offerings of this kind of paper are exceedingly sparse and buyers seeking immediate deliveries are finding it necessary to pay stiff prices to obtain supplies. Mills manufacturing newsprint, with few exceptions, are sold far ahead and haven't even so much as a pound of their product to offer in the open market. Publishers in all sections of the States are literally clamoring for additional amounts of paper and seem reconciled to the prices asked whenever finding supplies available; and it is known that some are making plans to curtail their consumption because of the increasing difficulty in covering their wants. In this connection the following significant statement was printed by the Chicago Tribune, one of the foremost Middle West dailies, in its issue of yesterday:

"By reason of the severe shortage of newsprint throughout the country and the consequent obligation of newspapers everywhere to conserve paper, commencing Monday, November 3, The Chicago Tribune will restrict the average size of its daily issues to thirty-two pages until the need for conservation is past. The thirty-two page average will be maintained each week, and should any weekday issue exceed thirty-two pages, other issues in the same week will be correspondingly reduced in size to secure the average. The enormous volume of advertising published in The Daily Tribune makes this step a hardship upon The Tribune and its advertisers alike. The Tribune hopes, however, that with the co-operation of its advertisers in reducing the amount of their advertising space the present emergency may be soon passed and a return to normal conditions assured."

Also in this connection it can be stated that the strike of the printers and pressmen has been a God-send to many publishers of magazines and periodicals that suspended consumption during the past four weeks by relieving the shortage of book papers to such an extent that a good many publishers can be assured of their needed supplies over the next few months. With one or two exceptions, every weekly and monthly periodical published in New York City has missed one or more issues since the strike was instituted and this deplorable loss of consumption of course has increased potential paper supplies for some time to come.

Talk is heard in the trade regarding sales of spot lots of newsprint at as high as 6 cents per pound. Actual transactions have been recorded at 5.50 cents, but it is questionable whether 6 cents has as yet been actually secured for news in rolls. Export demand is pointed,

# WOOD PULP TRADING CO., Ltd.

Rio de Janeiro, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

but Government restrictions continue in vogue, the agreement signed by paper manufacturers providing for the maintenance of export regulations until three months after peace is formally declared. (Since this was written, a news dispatch reports a new export embargo to ensure coal.) Book papers are firm in price despite the letting up of demand, and mills are kept busy, most of them running at maximum capacity turning out paper on contracts and back orders. Wrappings are moving in a consistent manner and at steady quotations, while tissues are firm and in good demand. Fine papers are characterized by a firm price-undertone and are sought in increasing volume.

The board market has settled down to an extent and demand is lighter than for some time, yet mills are running full on old orders and still have two to three weeks' business to fill. Prices are steady at around

\$60 for plain chip board, with reports heard of some sales at a bit under this basis. News board is selling at \$65 and wood pulp board at \$82.50 to \$90.

**BAGGING AND ROPE**—Quietness prevails in the markets for old rope and bagging. Demand for the latter is exceptionally narrow, consuming mills apparently having present requirements taken care of and being indisposed to augment their holdings through additional purchases, so that prices are easy. Offers of No. 1 scrap bagging by dealers at 2.75 cents f.o.b. New York more often fail to result in orders, while roofing bagging finds few takers at around 2.25 cents. Old rope is quotable at a range of 6. to 6.25 cents, with the bulk of current business involving shipments against old orders. Mills are doing little fresh buying and dealers, provided with a narrow outlet for accumulations, show a willingness to shade prices to effect sales.

**CHEMICAL PULP**—Current demand for chemical wood pulp is of a steady character though lacking much of the excitement prevailing a short time ago. Consumers evidently have at least partially covered their requirements and are exerting greater caution in buying now than they did a few weeks back, yet offerings are being readily absorbed and little pulp is lying around in the market awaiting a buyer. Prices are maintained and sellers show no disposition to grant concessions to stimulate the demand. Demand is centered on bleached sulphite and unbleached sulphite of newsprint quality, and the former of No. 1 grade of domestic grain is freely selling at 6 cents a pound at the producing mill, while newsprint sulphite is easily fetching \$70 to \$75 per ton f.o.b. shipping point. The easiness which developed in kraft pulp prices several weeks ago apparently has disappeared, this being due presumably to the fact that when quotations declined buyers came flocking into the market to acquire supplies. Domestic kraft of No. 1 quality is firmly quoted at \$80 to \$85 a ton and Scandinavian kraft is held at \$82.50 to \$90 on the dock. Such pulp as has arrived at New York from the other side of the Atlantic during the past fortnight is virtually unavailable owing to the longshoremen's strike at this port, but it is understood importers are disposing of pulp coming in at other ports.

#### McAVITY'S GOOD SHOTS.

St. John, N.B., November 4.—Ronald A. McAvity and Clifford McAvity returned today from a hunting trip, having shot a 400-pound black bear not more than twenty miles from the city. They also got a fine bull moose.

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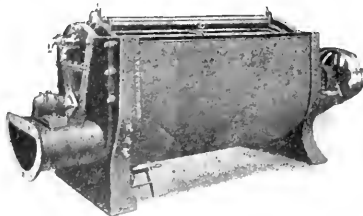
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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

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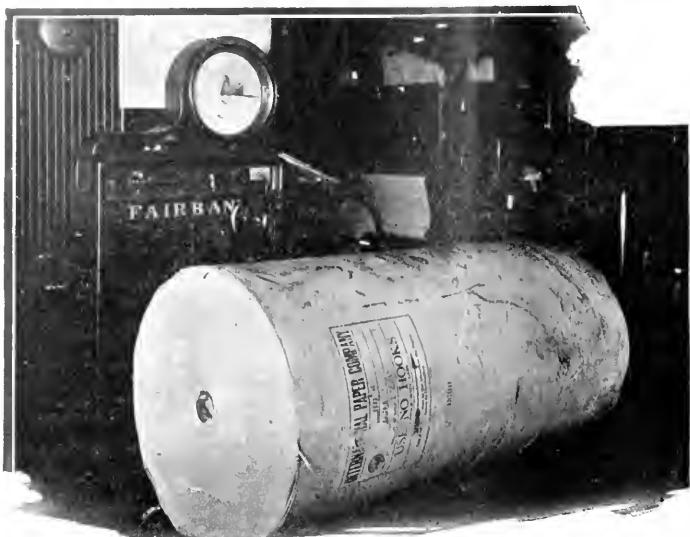
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# EDITORIAL

## NEWSPRINT PAPER—AN INTERNATIONAL OBLIGATION.

The fact that there is on foot a movement to bring about, if possible, a feeling of confidence and mutual respect between the publishers of newspapers in Canada and the mills which supply them with paper serves to emphasize the importance of a situation which is much broader than some consumers of newsprint in Canada have conceived it to be. It would be both tedious and useless to review the history of newsprint regulation in Canada but it would be helpful to consider for a few moments the present and future effect of the continuance of such price regulations as those in force since the newspaper publishers of Canada persuaded Sir Thomas White, then Minister of Finance, to place a maximum price and other regulations on the sale of newsprint by Canadian mills to Canadian consumers.

We have always felt and still feel that the action of the Finance Minister was initially taken on the basis of what was really a false economic conception although the publishers may have acted in perfectly good faith in the matter. There may have been good ground for assuring a supply of newsprint to Canadian publishers but we believe, in the light of subsequent developments, that such action was not financially necessary. It is quite obvious that there is now no financial reason for the continuation of these restrictions or for any further price fixing. The newspapers in the United States, owing largely to apparent attempts of advertisers to evade the payment of excess profit taxes have an unprecedented demand for advertising which they could hardly be said to enjoy as the volume is so great as seriously to embarrass them. As a matter of fact many of the large metropolitan papers find it necessary to hang out the S.R.O. sign, as it were, and tell on their front page how many columns of advertising had to be omitted. This state of affairs is due to the inability of the paper mills to supply sufficient newsprint to satisfy the advertising public.

As pointed out last week the demand from the financially stronger city papers tends to place the smaller country publications in a serious predicament as regards newsprint supplies unless the paper mills are generous enough to forego a temporary financial advantage in order to maintain this important portion of the country's newspapers.

Canadian advertisers do not have the same reasons for dumping five year contracts, paid in advance

upon the newspapers but the Canadian papers are apparently enjoying at least some portion of the huge expenditure of American money in extensive advertising campaigns. The Canadian advertisers too are using a large amount of space and newspapers are probably as large or larger now than they ever have been. They are certainly as prosperous as at any time and there is no reason on this score for a plea to be treated in any way different from the publishers across the line or in Great Britain.

We trust they will pardon us for presuming to tell them something about their own business but the foregoing observations will serve as an introduction to our main argument.

As intimated above, the newsprint situation in Canada has an international significance. For several years, ostensibly in pressure of war conditions, the Canadian paper manufacturers have been forced by Orders in Council to sell their product to Canadian consumers for \$10 or more per ton less than the whole Canadian production could have been disposed of in other parts of the British Empire and in the United States, to say nothing of other allied and neutral countries who were practically starving for newsprint. The prices that publishers in other countries would have been glad to pay for the newsprint, which on account of these orders had to be retained in Canada, were not panic prices nor famine prices but represented an increase in value in the direction but not to the extent of the prices of other commodities. General market conditions, of course had an effect.

During these years the Canadian publisher has enjoyed an outright gift of something like \$200,000 a year, at the least, by order of the government but not out of the Public Treasury. No Finance Minister or Paper Controller would have dared take such action as that. It has come out of the pockets of the paper manufacturers and having come out of their pockets has to a large degree prevented a development of the industry which would have given employment to thousands of men now idle.

But that is getting a bit off the point. The relations between Canada and the United States are such as would arouse the envy of observers in other parts of the world. There is an international brotherly feeling here that has frequently made itself evident in practical ways. At the time of the recent serious coal shortage and transportation difficulties Canada was treated not only fairly but with a generosity

which could hardly have been expected under the circumstances and which we fear was not fully appreciated. Canadian consumers of coal were able to purchase supplies at the same mine prices as American consumers and suffered far less in inconvenience than did many of our neighbors. There are difficulties in the coal situation in the United States today and one of the first statements of the Fuel Controller was that Canadian consumers would be dealt with on identically the same basis as Americans and that no discrimination whatever should be shown. There is a little difficulty in regard to the exchange of freight cars but this is to a considerable extent unavoidable and is being corrected as rapidly as possible.

Matters of this kind seem to be lost sight of by those who would impose restrictions of various kinds on a particular branch of Canadian industry. By requiring the Canadian newsprint producer to sell his product in Canada at a price very considerably under the world's market price and our neighbor's market price and our neighbor's government price he is placed in a very embarrassing position. His customer in the United States very properly wants to know why there is such a discrepancy. When the customer in New York buys paper at a market price of say \$80, to put it moderately, he wants to know why the same mill is selling the same paper to the Canadian publishers at \$69. The Englishman will hardly think that he is being treated fairly when there is such a difference in the f.o.b. mill price to him and to the Canadian publisher for the same product. To us it looks like unfair discrimination between parts of the Empire which are supposed to be bending every effort to arrive at a closer basis of co-operation.

As already stated the publishers of Canada have no reason to complain of their financial condition, if they ever did have such reason. As far as being assured of supplies is concerned we have heard repeatedly from mill men that the publisher has only to do business in a business-like way and pay what others are glad to pay for a necessary product and the Canadian mills will see him through. We have no desire to see any paper consumer over-charged and we firmly believe that paper prices today are not too high, though there may be occasional instances of profiteering. We heartily condemn such.

No one knows how long this unprecedented demand for advertising will keep up and the present discrimination which the paper makers are forced to observe places them in a rather compromising position in the eyes of foreign consumers who would otherwise be good prospective customers. Canada is being looked to more and more as the world's supplier of newsprint and if the publishers were as patriotic as they say they are they would endeavor to encourage the extension of trade connections instead of embarrassing the procedure by demanding privi-

leges to which they are not entitled on an economic or any other basis. Such discrimination is absolutely unfair to the customer as well as the producer and it should be stopped at once. As a nation, we cannot afford, in the eyes of the world, to subsidize a special class at the expense of one industry, which in turn must make good on foreign sales. It is neither right nor self-respecting to do so.

### SAVE THE COAL.

Winter is almost upon us and a very unfortunate occurrence has just taken place in the American soft coal fields. Approximately two-thirds of the miners of bituminous coal are out on strike, with an approximately proportional decrease in the production of coal. While probably enough mines are running to keep public utilities in operation and while most industrial concerns have enough fuel for a few weeks, or in some cases even a few months, it must be remembered that the distribution of coal takes considerable time and the shortage in many quarters necessarily resulting from decreased production will introduce difficulties in the transportation of the first production when the mines are again opened, as it is hoped they will be very shortly. These almost certain difficulties in transportation, particularly in view of the immediate approach of winter make it most necessary for users of coal to take the utmost care in its consumption.

Items have frequently appeared on these pages pointing out the sources of waste as well as means of conservation and we would emphasize the present urgent need for every pulp and paper mill manager and his engineers and technical men to consider very carefully the means of conserving coal. This may mean the expenditure of several dollars or perhaps several thousand dollars in stopping leaks in boiler settings and chimneys, in buying new valves and insulation for steam pipes, for lining up shafting and improving machinery bearings and their lubrication, but as the old saying is "Every Little Bit Helps" and the aggregate will be thousands of tons of coal saved during this winter and the saving of coal in the mill means the saving in transportation facilities as well as the fuel necessary for hauling.

### COBWEBS.

The Canadian Pulp and Paper Association has very comfortable accommodations in their new quarters, 701-2 Drummond Building, St. Catherine and Peel Sts., Montreal. The new telephone number is 9322 Uptown.

With the present demand for groundwood pulp the weather man will certainly be considered a friend of the industry for the amount of moisture that has fallen during the past few weeks. It is to be hoped that good water conditions will continue in view of the demand for pulp and the shortage of coal.



# Canadian Pulp and Paper in the British Market

Acting upon the request of the Canadian Trade Mission to England and upon representations made by the Department of Trade and Commerce at Ottawa, a general meeting of representatives of the Canadian Pulp and Paper Industry was held in Montreal in June, 1919, at which it was decided to send Mr. A. L. Dawe, Secretary of the Canadian Pulp and Paper Association, to England, to assist the Canadian Trade Mission in London in stimulating interest among the British importers of pulp and paper in Canada's production of these commodities. Mr. Dawe proceeded to London and opened an office in connection with the Canadian Trade Mission at No. 1 Regent Street, S. W., remaining there for three months. He made a thorough study of the British markets for Canadian pulp and paper, the results of his investigations being set forth in the following reports, made upon his return to Canada.

Through the courtesy of the Canadian Pulp and Paper Association, the Pulp and Paper Magazine is pleased to present the following from the report.

There is no doubt that the removal of restrictions in March, the uncertainty of the Government's future trade policy and the general business disorganization all combined to bring about a state of affairs in British industry which, unhappily, is not altogether unknown in Canada, resulting in a condition of mind among consumers which prevents wholesale buying, every manufacturer whistling to keep up his courage and every buyer engaged in bearing the market and trying to break prices to the lowest point. Publishers of books and other consumers of papers jockeyed for position. Their reluctance to purchase was not stimulated by the wholesale reductions in prices which were made. As an example, a paper selling one day at 25 cents per lb. would be offered the next at 16 cents, a difference of \$180 per ton.

The effect of these conditions on the paper mill may be gauged from the fact that within three weeks of the first order, removing restrictions as and from 1st May, very few mills outside of news mills had enough orders on their books to keep them going for more than a few days. Out of the 220 mills which are devoted to all kinds and classes of papers, at least 100 were in serious danger of being closed, thereby throwing thousands of paper-makers out of employment.

Under these conditions the paper makers had no difficulty in making out a very strong case for an immediate re-imposition of import restrictions to continue until such time as the Government should announce their long promised trade policy.

The immediate effect of renewed restrictions was to send a flood of orders to the paper mills and to cause some buyers to turn to Canada for paper imports, as this country was exempt from the re-imposed regulations. Many paper agents who had hitherto been interested in Scandinavian or German sources of supply began to cultivate Canadian mills, assuming that the Government's trade policy would include some form of Imperial preference. Other lines, such as boards, were eagerly sought from Canada, because, under the restriction, 250 per cent of the quantity purchased in the British Empire might be imported from other sources, such as Scandinavia.

In every case, the greatest cordiality was expressed towards Canada and Canadian goods and it was only the unavoidable lack of shipping that prevented Canada from taking fuller advantage of the preferred position which this country then enjoyed.

The Canadian manufacturers of pulp and paper, however, have no reason to complain of the amount of business which has come to them in the past six months from Great Britain, but this situation is now changed. Much to the surprise of the paper industry, the famous "locked box" of the Prime Minister, when opened, disclosed nothing but generalities and a declaration of renewed confidence in the policy of Free Trade with the world.

## Canada Up Against The World.

The immediate effect of the removal of all trade restrictions from 1st September was to place Canada in direct competition with the rest of the world. Thus, the entire burden of retaining British business secured under the former favorable conditions and of making Great Britain a permanent market for their products, is placed upon the Canadian manufacturers.

We have, unfortunately, the reputation of being opportunists in trade. This can be overcome if those firms who have already secured a footing in Great Britain will formulate for themselves and their representatives a definite trade policy which they are willing to maintain at all costs, remembering that export business is like advertising in that success lies in continuity of effort, the practice of "keeping everlastingly at it."

The British market is no place for weaklings or quitters. Unless a manufacturer is prepared to stick it out at all hazards, he had better not make a beginning. Even in the short time that I have been in England, the Canadian domestic markets recovered to such an extent that orders for overseas export, eagerly sought and thankfully received three months ago, no longer occupy such a favored position. It is open to question whether such a policy is fair to our accredited agents abroad or to the overseas consumer. The present partiality of British buyers towards products of the Empire is very real and may easily be turned into a valuable asset by the exercise of the same policy of fair play and courtesy that Canadian manufacturers extend to their domestic customers. Without it, the opportunity will be lost.

A great deal of Canadian board was and is being utilized to make food containers, which seem likely to become a permanent business for which Canadian board seems peculiarly well adapted.

What groups of papers are most in demand in Great Britain? They may be classified roughly as newsprint, kraft wrappings, boards and writings, which are here dealt with separately.

**Newsprint.**—There are in England 12 newsprint mills of importance with a potential production of 450,000 tons (2,240 lbs.) per annum. A pre-war consumption of over 600,000 tons per annum left 150,000 tons available for Scandinavia, Germany, Finland and Canada. Post-war production and consumption will not be relatively different.

How much of this excess demand Canada will eventually supply, rests entirely with the Canadian manufacturer. The industry has been fortunate in getting a great deal of publicity, the results of which have

not been without some embarrassment to the representatives of such Canadian newsprint makers as are represented in London.

Articles in the principal British trade journals devoted to the publishing business, addresses to newspaper publishers' associations and talks with individual publishers have brought many genuine enquiries and offers of business which could not be accepted immediately, owing to inability to obtain the necessary shipping accommodation, if for no other reason. These demands are likely to continue. Canadian newsprint is undeniably popular with the British publishers and, in view of the excellent selling arrangements that have been made by some of the Canadian newsprint mills, the British market should prove one of prime importance in the near future.

The present market price of newsprint in England is 3 $\frac{1}{4}$  cents per lb. This shows no indication of weakening. The recent change in working conditions and the extra cost of running mills on the 3-tour system have more than offset any decrease in the cost of raw materials. At the time of writing, the market for both mechanical and chemical pulp has sufficiently strengthened to warrant a statement that prices tend to higher levels rather than lower. The present price of 3 $\frac{1}{4}$  cents per lb. represents, with exchange at \$4.34, a value of \$117.52 per 2,000 lbs. which, after deducting \$37.50 per 2,000 lbs. to cover freight, insurance, and landing charges, represents approximately 4 cents per lb. at seaboard.

**Kraft Wrappings.**—Kraft paper is enjoying an increasing popularity in Great Britain, and there are now 14 mills manufacturing this class of wrapping, to the gradual exclusion of the thick but weak, common brown wrapping formerly used.

Few British mills have been able to turn out a really first class kraft paper on account of their having to import all supplies of pulp in a 90 per cent dry state resulting in a consequent weakening of fibre. For years it has been assumed that the secret of successful kraft paper rested with the European manufacturers, and it is consequently gratifying to Canadian manufacturers to learn that not only is Canadian kraft becoming a formidable rival to the European grades but that it is being eagerly sought by an increasing number of buyers.

More attention should be paid to color and finish. The British market prefers the rich golden-brown shade as indicating strength and the smooth finish of mills such as Torps Brug., samples of which have been sent to all Canadian kraft mills. In M.G. grades a highly polished surface is demanded and Canadian manufacturers will do well to pay their competitors the compliment of imitation in this respect.

The Scandinavian and Finnish mills are in very close combination, and a convention price of £59 0 0 per 2,240 lbs. for unglazed kraft and £53 0 0 for M.G. kraft is stated to be the current price. Both of these are c.i.f. British ports. At a Canadian exchange rate of \$4 34 to the pound sterling, this would represent \$201 46 per 2,000 lbs. and \$205 36 per 2,000 respectively, netting \$8 20 and \$8 40 at seaboard.

It must be remembered that the control of the convention is not absolute. In fact, prices have been made as low as £47 per ton (2,240 lbs.). The day that restrictions on imports were removed, a Manchester firm by the name of Felber Juoker were busily offering the product of a mill called Munksjo at £46 per ton c.i.f., this M.G. paper being kraft colored M.G.

sulphite, so that unfair as well as keen competition must be expected.

The large markets for kraft will be found in London and Manchester. Active competition may be expected from Sweden, Norway, and Finland, but there is no reason for discouragement in this fact. It may surprise some to know that the 14 mills which practically cover the kraft paper industry of Sweden have 14 Fourdrinier and 18 Yankee machines with a total tonnage of 60,000 tons per annum. The four mills of Norway with six Fourdrinier machines and four Yankee machines produce 32,000 tons per annum. Two mills in Finland produce between them less than 15,000 tons a year.

In figuring the available genuine kraft paper output of Scandinavia at around 110,000 tons per annum, no consideration is given to the many substitutes which appear on the market in the shape of colored sulphite papers.

The present production of kraft paper in Canada is about 55,000 tons per annum. Can it be possible that the manufacturers of kraft are less ready to seek the initiative than the manufacturers of newsprint paper? It is inconceivable that Canada shall take second place to Scandinavia, with its small and, in many cases, far from modern mills. Inasmuch as kraft paper is a highly specialized product, manufacturers who intend to maintain an export business in Great Britain and elsewhere will do well to prevent overlapping and duplication in their efforts to secure business there.

**Boards.**—The board business is one in which Canadian manufacturers have taken no small part in the past 15 to 20 years and there are but few suggestions to offer to Canadian mills. Canadian board is very popular with British box-makers on account of its rigidity, good appearance, and easy working properties. It would have been an easy matter to have sold twice the quantity disposed of in the past few months had shipping space been available to transport it to market.

Other lines of boards that are becoming popular are test-board for paper cases and different varieties of folding box-board including good grades of white lined, or what is known to Canadians as patent coated boards.

The largest manufacturer of boards of the cheaper varieties is undoubtedly the Thames Paper Company, whose products have a most familiar appearance until one learns that they are produced in a box-board mill run on American lines, the softness of the boards themselves being a characteristic resulting from the soft paper stock employed. Pieces and samples of these boards are on file at the offices of the Association.

**Writing and Printing Papers.**—It is doubtful whether any permanent market in Great Britain for printing papers or cheap writing papers is possible, with the exception of specialties and a limited quantity of high-grade bond papers. The continued use of hard bond papers is a matter of educating the consumer. An aggressive campaign would no doubt result in a good market for the more expensive qualities of paper.

The British mills have no reason to fear foreign competition on writing papers, the quality of their products strongly entrenching them in the home market. It is a great tribute to their general efficiency that they have been able to return to pre-war standards in the course of a few months. Great care is exercised by the British mills in making high-grade

papers and special attention is given to the sorting, finishing and packing of such grades. Their efforts in these directions excel those of other countries. Mills in Canada and the United States are too prone to sacrifice quality for production, and while it is true that the look-through of a paper has little to do with the printing qualities, it is nevertheless difficult so to convince a British paper buyer.

Canadian manufacturers undoubtedly have a great deal to learn in regard to finishing and packing. If every mill executive would make a point of demanding service in this respect, a marked difference in the attitude of buyers towards our products would follow.

Some other lines of paper which should be considered by Canadian manufacturers are:

**Wall-Paper.**—During the year representatives from different wall-paper manufacturers have endeavored to purchase their supplies of paper from Canadian mills, but in every case difficulties as to size as well as the lack of tonnage have stood in the way of any considerable development of trade along this line.

While it is true that the British demands for small lots of different colors do not make the business attractive to the average large production mill, there is sufficient of the white material to make it worth while.

**Papers with M.G. Finish.**—Under this heading may be considered kraft and sulphite wrappings, light-weight papers known as "caps" and litho or label papers.

The experience of the Wayagamaek Paper Company with M. G. kraft will demonstrate the heavy demand for this grade. Nor is this demand likely to decrease in the future, as the consumer is constantly finding new uses for kraft paper, both in unglazed and M.G. glazed finishes. The old style heavy, brown wrapping paper is rapidly giving place to the light and strong kraft. The use of M.G. paper must not be considered as a fad, but rather as a sensible idea. In Manchester and other large packing and shipping centres, goods are wrapped in M.G. paper so that when stored on shelves or elsewhere they may not collect dirt or dust as readily as when unglazed paper is used. The weights run from 24 x 36, 24 lbs., to 90 and 100 lbs. per ream in broad stripe, narrow stripe, and plain finishes.

A great deal of M.G. sulphite is used in various weights, running from the very light 24 x 36, 11 lbs. 500s, which is known as "M.G. Sulphite Cap" by thicknesses of 1 lb. per ream up to 24 x 36, 24 lbs., when it is known as an M.G. sulphite wrapping.

The light-weight "caps" are used for millinery and flour bags and also for store wrapping paper. In connection with the use of this paper for bags it must be remembered that while sugar is sold to include the weight of paper, flour and millinery bags bring no profit to the retailer and the lightest article serves.

Sized and heavy-weight M.G. sulphite is used extensively for envelope work both in white and colors.

While some qualities of M.G. papers are pure sulphite pulp, others are mixture of sulphite and mechanical pulp in various proportions.

The prices for these qualities are on file at the offices of the Association, together with regular sizes.

The consumption of "M.G. Caps" alone, outside of M.G. wrappings and envelope papers, is estimated as being between 35,000 and 50,000 tons per annum, of which the British mills supply about 10,000 tons. Whether it would prove a profitable undertaking

for a Canadian mill to go into the manufacture of M. G. caps on an extensive scale would depend on the ability of the mill to secure pulp at a low and constant figure.

M.G. litho paper constitutes a line peculiar to Great Britain. It is a bleached paper glazed on one side and unglazed underside. It is used for poster work, can labels and board lining, the rough underside being specially suited to pasting work. While this paper has not hitherto been made in Canada and only a small amount imported, its possibilities are immense, providing it can be marketed at a reasonable figure.

**Leatherboards.**—A specialty of Sweden and Finland not as yet produced in Canada. (There is one leather-board mill, at least, in Canada.—Ed.)

**Glazed Imitation Parchment.**—A line of bleached and unbleached sulphite papers which have a constant sale in all parts of the world. Made by Norway, Sweden, Germany, Belgium, Austria, and Great Britain. It is used very extensively in India for writing purposes, in Japan as a substitute for the real Japanese vellum. In Great Britain, its uses are for wrapping and bag-making purposes.

It is a line of paper which should be seriously considered by one or more Canadian mills.

**Real Featherweight Book.**—Recent samples show a decided improvement in the quality of British manufactures, and it will be difficult for Canadian mills to secure business on this line.

Note.—The next issue will contain Mr. Dawe's remarks on "The Pulp Situation."

### BEARS KILL TREES.

Hundreds of trees in the Northwest, including Douglas fir, white fir and western white pine have been seriously damaged by bears peeling the bark. About 100 trees to the square mile have been peeled.

### TRANSPORTATION TOPICS.

#### United States Government Tax On Freight Charges

Canadian importers of goods from the United States have experienced considerable annoyance owing to the wrong interpretation which is apparently being placed on U. S. Government Treasury Decisions Nos. T. D. 2889, 2917 and 2928, providing for 3 per cent tax on freight charges.

Under these decisions the tax in question is not assessable on property moving under a through bill of lading from a point in the United States to Canada; but in order to ensure this exemption from taxation it is necessary that certificates be made out on forms prescribed by the Treasury department, namely, form 798 and form 799.

These certificates should be on file with the Railway agent at shipping point when goods are offered for shipment, and all importers should see that their shippers arrange to have the necessary forms filled, so as to ensure shipments coming through without the tax.

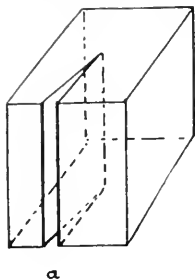
In cases where the tax has already been collected, the consignee paying the freight charges may file a claim for refund, with the Commissioner of Internal Revenue, U. S. Treasury Department, Washington, D. C. These claims should be submitted on Form 46, which may be obtained from the Treasury Department and if an application is made also for a copy of Treasury Division T. D. 2917, the applicant will obtain full particulars in regard to documents required in filing such claims.

## THE "WEDGE" SYSTEM OF TESTING PULP.<sup>1</sup>

By SINDAIL and BACON.

The wedge system of sampling bales of woodpulp now long established and accepted as the most correct method of sampling pulp baled up in the form of sheets can easily be adapted for taking samples from pulp packed in roll form. The wedge system is based upon the principle of drawing equal sized pieces from equal volumes of pulp and in practice the bale is divided up into five volumes from each of which volumes a wedge is cut in size strictly proportional to the volume it represents. These volumes need not necessarily be of equal size, so long as the wedges cut are proportional.

In our book "The Testing of Woodpulp," we have fully set out the application of this system to sulphite



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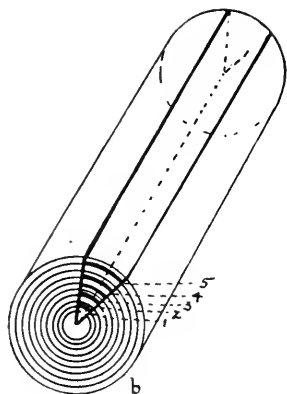


Fig. 1.

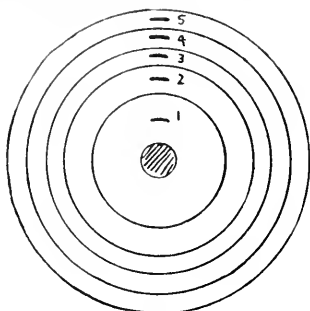
rolls showing that if the roll is divided into five equal sized volumes, the five sample pieces would then take the form of five equal sized strips cut from various points in the roll. The disadvantage of the method described is obvious, since one must mark out the exact position of each strip and these positions vary with the diameter of the roll.

An easier method is to take the five strips at equal distances apart starting from the center or the circumference of the roll varying the width of strip cut, so that the strip is proportional to the volume it repre-

sents. We may proceed to show the methods by means of the diagrams in Fig. 1.

A complete wedge sample cut from a bale is shown in Fig. 1a. This is simply the theoretical wedge that might conceivably be cut from the bale. In actual practice five thin wedges are taken at selected distances apart commencing near the top of the bale. To obviate errors, due to possible inequalities in moisture, these wedges are not all cut from one side of the bale, but alternately from the long and short sides.

The theoretical wedge sample cut from a roll is represented in Fig. 1b. The wedge in this case commences at the center of the roll, widening out towards the circumference as shown. The exact width of the base of the wedge is merely a matter of convenience. A simple plan would be to select the first strip about one inch down into the roll from the circumference



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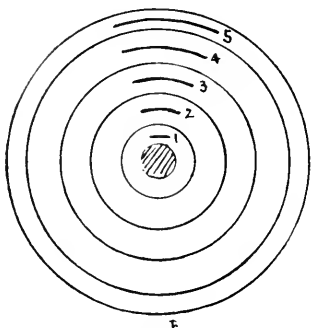


Fig. 2.

cutting same five inches wide as indicated at Fig. 1b mark five. The fifth strip could be taken about one inch from the centre of the roll, and this would be one inch wide. The other strips would be equal distances apart being cut 4 in., 2 in., respectively, as shown in the figure.

The five pieces in themselves constitute a "wedge" corresponding to the wedge shaped piece marked in the design. The sampling process would then resolve itself into slitting the roll down to the centre by any convenient method and cutting the sample strips five in number, equal distances apart being the proportional widths 5, 4, 3, 2, 1. With the first strip 5 ins. wide, the weight of sample is somewhat excessive in larger consignments, and the chemist might be disposed to cut the strips  $2\frac{1}{2}$  to  $\frac{1}{2}$  in. This is a matter of convenience.

The simplicity of this system as compared with that in which it is supposed the roll is divided into five equal volumes is illustrated in Fig. 2.

If the roll is divided into five equal volumes as represented by the circles, Fig. 2a, the strips which have then to be cut of equal width must be taken at varying distances apart. The distances for a roll 24 ins. diameter taken from the centre are  $3\frac{1}{2}$  in.,  $6\frac{1}{2}$  in.,  $8\frac{1}{2}$  in., 10 in., and  $11\frac{1}{2}$  in., respectively.

If the strips are cut of varying width 5 in., 4 in., 3 in., 2 in., 1 in., they are taken at equal distances apart as shown in Fig. 2b, and this method clearly offers an easy effective system.

The Abitibi Power and Paper Co. pays about \$400,000 a year to settlers for pulpwood, in addition to employing hundreds of men in mill and forest. Yet it has been intimated that the public is not getting a fair return for the initial concessions which enabled the establishment of the plant.

<sup>1</sup>From "The Paper Makers' Monthly Journal," May 15, 1919.

It is better to be warm than to be fashionable.

# A Coming Industry for Canada; Manufacture of Strawboard\*

By W. A. BELL.  
(American Straw Board Company.)

Corrugating strawboard is made from straw. Most of the strawboard mills are located in Ohio, Indiana and Illinois. The reasons are two: first, being centrally located, shipments of the manufactured product can be sent to the east, west, north or south to better advantage from this territory; second, on account of fuel. Coal is plentiful in Ohio, Indiana and Illinois, and freight rates less than they would be from other territory.

Wheat raised in Ohio, Indiana and Illinois is what is known as the winter variety. It is planted in the fall, stays in the ground through the winter and is harvested between the middle of June and the last of July. Wheat is cut by reapers which bind it in bundles or sheaves. (This is a sheaf of wheat taken from the field.) These sheaves or bundles are gathered up by the harvesters who follow the reaper and put into piles or shocks, where it stays until the threshers put it through the threshing machine. The

on the railroad we have to pay freight on the water as well as the straw, as the railroads will not make any allowance for damp straw.

After the straw is baled, it is taken to the nearest railroad, loaded into cars and shipped to the mills. Ten tons of dry straw is about all that can be put in an average car.

When the straw reaches the mill, it is unloaded on to wagons, hauled to the straw yard and piled into large piles or ricks, which contain all the way from 600 tons to 1,200 tons in each rick. Some mills pile their straw in large ricks and others in small ricks. A mill manager who has had several fires in his pile of straw at the mill usually prefers to pile it in small ricks. His reason is that if fire starts in his straw yard and the straw is piled in small ricks, he has a better chance to save at least a part of it than he would have if it were piled in large ricks. On account of fire hazard, insurance companies insist that the



Photo No. 1—Straw Carriers into Rotary House.



Photo No. 4—Pile of Cooked Straw in Stock Pit.

threshers go from one farm to another, and it may be three or four weeks after the wheat is cut before it is threshed.

The threshing machine separates the grain from the straw. The grain falls through the thresher, comes out at the bottom, where it is put into sacks while the straw is carried on through the machine and blown out through a stack or large pipe into a pile. Later on the straw is baled. This is done by running through a hay or straw press. (I have here a bale of straw which weighs about 70 lbs.) As there was no rain between the time this straw was threshed and the time it was baled, it only weighs about 70 lbs., while if there had been heavy rains after this straw was threshed and before it was baled, this same bale would weigh as much as 85 or even 100 lbs. When the shippers send wet straw to the mills a deduction is made for the water, but if wet straw is shipped

straw be piled a certain distance away from any building connected with the mill. Usually it must be piled at least 2,000 ft. away from the mill.

When we are ready to use the straw in the mill, it is unloaded on wagons and hauled from the straw yard to the carrier, which carries it to the straw room, which is the second floor of the rotary house.

In order that you may follow me in my description of how we make strawboard, I have here a number of photographs showing the different processes through which we put the straw as it goes through the mill. These photographs are numbered from one to nine. These I will distribute among you so that all will be able to follow the process with me.

Photograph No. 1 shows the straw carrier which is made of two endless chains about five feet apart, connected with an iron bar every five or six feet. There is a platform on each side of the carrier; as you look at the photograph, the side nearest you is where the straw is unloaded from the wagon on to the carrier platform, where the wire bales are cut and the straw

\*Delivered at the Convention of the Mid-West Box Company.

is then carried onto the carrier proper. On the far side of the carrier you will note a freight car. When we unload the straw direct from the cars we have the car placed at this platform and the straw is taken from the car on to the platform where the wire on the bale is cut and the straw put on the carrier. The straw is carried up the chute shown in the photograph between the carrier platform and the building into the straw room.

Photograph No. 2 shows this straw room, which is the second floor of the rotary house. At the top of the photograph in the peak of the roof you will note a continuation of the carrier. On the bottom of this carrier you will see eight different slides or trap doors. When the men determine where they want the straw, they open the trap door or slide in the bottom of the carrier over where they want the straw dropped, and as the straw comes over the carrier, it drops through the traps onto the floor.

You will note on each side of the floor in Photograph No. 2 a square opening. Under each of these openings is a manhole in a rotary or cooker. Photograph No. 3 shows a rotary. There are twenty of

in the rotary a certain length of time it is removed by taking off the iron covers of the two man-holes, one at the top and the other at the bottom, letting the stock drop out of man-holes as the rotary turns around.

Under each rotary is a short carrier which carries this straw from under the rotary to the main carrier which runs the full length of the rotary room through the center and between the two rows of rotaries. This main carrier carries the straw into the stock room, which is shown in Photograph No. 4. (I have a sample here of straw which has been cooked in the rotaries, which I would like to have you examine.).

You will note in the foreground of Photograph No. 4 a stream of dark water which is running from under the pile of cooked straw. After this stock is dropped into the stock pit (Photograph No. 4) it is permitted to stand until water drains off it. In this way we remove a great deal of the lime water that was mixed with the straw in the rotary. Along the wall on the right hand side of the stock pit, Photograph No. 4, you will note short carriers. These carriers carry the stock from this stock room up into the

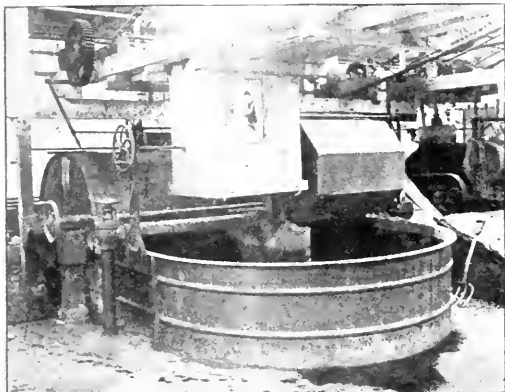


Photo No. 5—One of 21 Beaters with Washers.

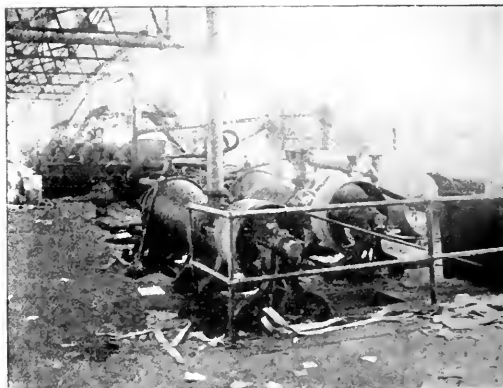


Photo No. 6—Jordans.

these in this mill, all of spherical type. The rotary has a man-hole at the top and the bottom. These man-holes are closed with an iron lid that is bolted down, making it air-tight when closed. In Photograph No. 2 in the foreground you will note an iron lid, which is one of the covers for the man-hole. The straw is put through the square opening in the floor over the man-hole into the rotary, and when the rotary is filled, lime water, which is slacked lime diluted with water, is turned into the rotary through pipes. You will notice in Photograph No. 2 on each side of the room near the floor under the windows iron pipes, and from it are connections which stand up along side of each window. When these pipes are let down, the end will come over the man-hole into the rotary. These supply pipes under the windows carry the lime water. After the proper amount of lime water is put into the rotary, the iron cover of the man-hole is put on, bolted down tight and the rotary then started to revolve. Steam is turned into the rotary through the pipe which you will notice in the axle, shown in Photograph No. 3. The mixing of the steam and lime water bring about a chemical action which separates the fibre of the straw, and after it is kept

beaters. The cross carriers run in pits under the pile of cooked straw, and these pits are covered over with short heavy planks. When they want stock in the beater room these short planks are pulled out from under the pile of cooked straw and the stock drops down on to the carrier, is carried up into the beater room and dropped into the beater as shown in Photograph No. 5. The carrier is above this beater, and the stock drops into the beater through the square box, on which you will note in the photograph is a picture of a girl in a bathing suit. On the lefthand side of the beater shown in Photograph No. 5 under the large oval cover is the beater roll, which is a large roll with iron bars running the full length and placed one next to the other about one inch apart. This beater roll revolves over what is called a bed plate, which is composed of iron bars placed in the bottom of the beater. This beater roll revolving causes the stock to move around the beater, and it travels toward you as you look at the photograph. On the right hand side is the washer, which is octangular, covered with fine copper wire, and rests on the moving stock. The weight of this washer resting on the stock takes up the dirty water which goes through

the fine mesh and is carried out through the inside. On the opposite side of the beater there is a pipe depositing just as much clear water as is taken out through the washer.

The stock remains in this beater until it is thoroughly beaten up and at the same time washed until all of the lime which was put into the rotary is washed out.

From this beater the stock is dropped into large cisterns or chests, and from these chests it is pumped up to the Jordans which are shown in Photograph No. 6. The stock is pumped into the boxes you will see above the Jordans and flows into the Jordans which are cone shaped refining engines.

After the straw is run through the Jordan it is dropped into another cistern or chest, and from this chest it is pumped up to the screen and after flowing over the screens it is dropped into the settling chest at the wet end of the cylinder machine. Here a large volume of water is mixed with the stock, the water coming through the large iron pipe shown in the photograph.

From here the stock flows down into the cylinder chest. You will note the top of the cylinder chest which is just under the white felt is lower than the top of the settling chest, and the water seeking its level, flows down of its own weight.

From the cylinder chest it is gathered on to the cylinder, which is covered with fine mesh copper wire. On the inside of the cylinder the level of the water is lower than it is on the outside, and the water with the stock mixed with it, seeking its level, flows against this wire screen. The water goes through, leaving the straw stock deposited on the surface of the cylinder. The cylinder revolves toward you as you look at the photograph. The wet felt traveling with the cylinder lifts the stock off the cylinder and carries it on this felt over or around a wood roll and away from you as you look at the photograph between two press rolls, the top one of which is a suction press roll. This is a round brass tube the width of the machine with holes bored all through it, and when the wet felt with the stock on it goes between this top suction press roll and the bottom rubber covered roll, the suction on the inside of the top or press roll draws the water out of the felt and stock into the cylinder. Most of the water in the stock is removed by this suction press roll. The stock travels on with the felt until it meets the top felt, which you will notice in the photograph is just beyond the step-ladder. From this point the stock travels between the two felts, under the second press roll where the remaining water is pressed out. From here the straw stock is sufficiently formed and dry enough to carry itself, and the top felt is turned back and up, and the lower felt on which the stock was originally gathered, turns back and under.

The paper is from here carried over the hot cylinders and dried, and comes out on the other end of the machine. Here we find the calendars, where the finish is put on the sheet and the winder, on which the rolls are slit and wound.

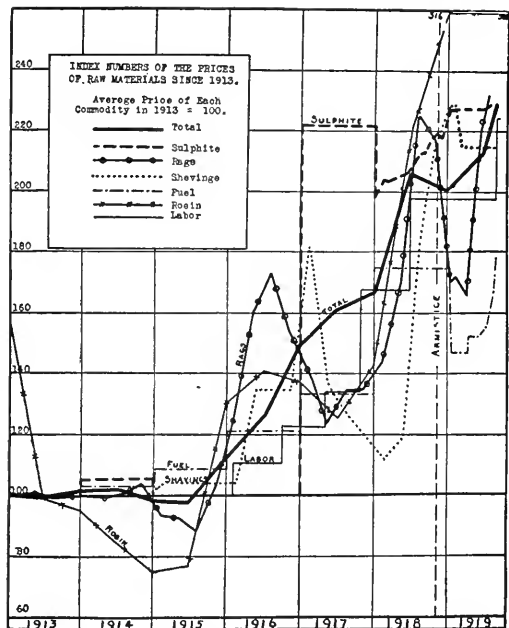
The sulphur-dioxide fumes escaping from the dumps of waste around the nickel mines in the Sudbury region of Ontario are said to amount to one thousand tons a day. No satisfactory method of saving this sulphur has yet been devised.

### PROSPECTS POOR FOR LOWER PRICES.

The following letter and chart were prepared by the American Writing Paper Co., and reproduced in Canada by the Howard Smith Paper Mills, Limited. It is good reading.

Merchants are great critics of manufacturers. As practical men, they must beware of "parlor economics." The new theme, which from a mote is becoming a beam in the eyes of many, is that prices must drop because increased production is bringing about lowered costs. If the whole truth were expressed in that short phrase, why then are commodity prices still high? Many industries are laboring under productive overloads. Are some profiteering? Are prospects good for lower prices?

It is the Fine Paper Industry that we are primarily interested in. Examining it for answers to these queries, what do we find? The chart attached pictures



the price course of the six principal commodities used in Writing Papers. This enables us to compare the base point at July, 1913, standing at 600 (6 x 100), with the total at the Armistice date of 1268, and to take note that to-day a total of 1450 points has been reached. Since the Armistice, then, the advance in points has been 182 or nearly 15 per cent. Understand, we are dealing in indices of commodity prices; to translate these figures into cost per pound of paper would require the averaging of grades and quantity furnished, not pertinent to this inquiry. Without going further (which would show additional increases) the fact is apparent that capacity production does not bring us, in the Fine Paper Industry, to any lower stage of prices.

The reason for this is that we did not meet the increased cost due to the lowered production of last spring by any price adjustment. We unfolded our

umbrellas and weathered the bad spell. Present prices, based on increased costs, are therefore as firm, if not more thoroughly fixed, than at any normal period ever experienced by this industry. The queries raised are therefore readily answered for us in the negative.

We aim in this letter to signify much, yet to be brief. This is our excuse for not amplifying our points. It were well, nevertheless, to cast an eye over other burdens of production that are stabilizing the present levels and which make, paradoxically, for certainty in the uncertainty that is widely prevalent.

**CONSTRUCTION.**—In the building trades, prices are stable. Labor contracts in the main are upon a three year basis with increases agreed upon for 1920 and again for 1921 and 1922. Materials are firm. This situation affects similarly our maintenance and repair costs.

**TRANSPORTATION.**—Higher costs are in the air and will settle down upon us in a short time.

**TAXES.**—It is probable that an attempt will be made to redistribute taxes in a more uniform and equitable way but the total amount cannot be reduced this year or next.

**INFLATION.**—Says the Federal Reserve Board: "The war is over—in a military sense—and while the bills have been settled by loans to the Government, these obligations, so far as they are carried by the banks, must be absorbed before the war chapter of the financial history of the country can be closed." Says the Secretary of the Treasurer: "Gross public debt will reach by June 30, 1920, a total of, say, \$26,516,506,160" (Canadian, March 31, 1919, \$1,574,531,032.44). Therefore, say we: No deflation in currency in sight. High rates must continue to rule against the present dollar value.

The only real practical way to stabilize the whole situation for ourselves—both merchants and manufacturers—is to maintain a level and large volume of business. Every energy must be exerted to bring about an increased use and consumption of paper, large stocks must be carried at all distributing depots and mills, and production must be kept up. We shall do our duty in this connection. Your cooperation is solicited.

### SHORTAGE OF DRUNKS CLOSES "PAPER PICKERY."

Camden, N. J., November 1.—Camden's municipal workhouse was closed today for prohibition. Known as the "paper pickery" and famous as an institution for the utilization of human derelicts, the workhouse since 1912 has been operated by habitual drunkards committed there by the police magistrates. Waste paper gathered by the Highway Department has been baled by the prisoners, and the city has been reaping a yearly profit of \$4,000 over the operating expenses and the cost of boarding the inmates.

In addition, all the brooms for the street-sweeping machines and the handrooms used by the street cleaners were made by the prisoners at nominal cost. Only three workmen have been at the pickery for the last week. Their sentences were up some time ago, but they preferred to remain, because they had no other place to go.

### ACTIVE FOREST PROPAGATION PROPAGANDIST

Taking advantage of the growing interest in public affairs throughout the Prairie Provinces, Mr. Robson Black, Secretary of the Can. Forestry Association, accompanied by a motion picture operator, addressed thirty public meetings between October 14th and November 1st. Mr. Black found the public interest in questions related to provincial forest management strikingly intensified as compared with four or five years ago. Western Canadian Clubs, Boards of Trade, Bankers and Mortgage Loans Association and other representative bodies held luncheons and dinners in nearly all large cities in order to provide an opportunity to hear forest conservation addresses. At some of the evening meetings in places like Calgary, Prince Albert and Winnipeg, the attendance of men ran as high as 600.

The chief point in the addresses was an outline of the extent of the prairie province forests and their present wretched condition owing mostly to unrestricted forest fires. Instead of an increasing variety of wood-using industries, the larger mills were giving up operations and enormous areas—as, for example, 40,000,000 non-agricultural acres in Saskatchewan—were being turned into permanent wilderness. The effect of burned forest upon irrigation was also discussed in detail and proved one of the hardest hitting points in the whole conservation argument. The industrial potentialities of spruce-growing lands, the need of provincial and Dominion co-operation in debarring the annual fire plague, the value of tree planting to crop production were other points treated by Mr. Black. The Forestry Association is endeavouring to establish a resident Western propagandist and to engage a children's lecturer. The latter would give his entire time to school addresses in all parts of Canada and would make generous use of motion pictures. In this way, scores of thousands of young men and women annually would become personally acquainted with the interesting handling of the natural resources. An appeal will be made for better financial support of the Forestry Association which has a slight government revenue and a national membership of ten thousand.

### BORING THROUGH KNOTS AND SPIKES.

In mill repair work, a man cannot pick the place to bore a hole but he must work to the mark, no matter if a broken spike, a fierce knot or a rusted-off bolt already occupies the place where a hole is needed. It is in such cases that the skill of the millwright becomes manifest. He will dig in with a cold-chisel and cut off the offending bit of metal, or he will, perhaps, be able to drive in a drift and force the metal to one side, after which the hole may be continued.

Sometimes it is necessary to weld an extension to the shank of a twist drill and remove the bit of hard metal in that manner. To guard against trouble in this direction, especially in small shallow holes, the up-to-date millwright adds to his kit a set of twist drill bits. These most excellent tools are like cigars, only "more so"—they don't give a continental who uses them or what they are used on, and they will go right through wood, steel or knots.—Millwrighting.

She ate a solid pound of candy every day—and yet she belonged to a temperance society.



# BRITISH TRADE NEWS

London, October, 23rd, 1919.—The Trade Board figures for September have some interesting features and among them is the fine shipment of newsprint from Newfoundland. These returns are growing steadily each month, as the following figures for imports—which include paper of all kinds and boards—and exports show:—

	1918. Tons.	1919. Tons.
Imports . . . . .	8,453½	42,595
January-September . . . . .	84,251	222,596
Exports . . . . .	1,872	4,269
January-September . . . . .	22,449	29,795

I have also quoted the figures for the nine months and made a comparison for the corresponding period of last year. The newsprints imports were received from the following sources in September:—

	1919. Jany-Sept. Cwts.	1919. Jany-Sept. Cwts.
Sweden . . . . .	18,339	225,593
Norway . . . . .	21,325	171,047
U. S. A. . . . .	15,223	46,877
Newfoundland . . . . .	201,760	558,330
Other Countries . . . . .	93,239	349,750

Canada is included in "Other Countries" and, of course, the figures under this heading relate mostly to the Dominion. It will be seen that Newfoundland mills are Sweden's and Norway's greatest competitors in the British market and the paper is much appreciated here.

### The Pulp Imports.

Usually at this time of the year wood pulp supplies received from different sources are heavy, but I notice the figures are somewhat disappointing for September and for the nine months. They show that all is not well in the mills. No doubt the strike and the scarcity of labor at the beginning of the year had a material effect and accounts for the small increase. The imports were as follows:—

	Sept. 1919. Tons.	Jany-Sept. Tons.
Chemical wood pulp . . . . .	41,138	262,286
Ground wood pulp . . . . .	48,539	398,694

The figures for 1918, the corresponding period, were:—Chemical wood pulp 21,640 tons for the nine months 160,345. The moist ground wood was received from the following sources:—

	Sept. 1919. Tons.	Jany-Sept. Tons.
Sweden . . . . .	3,005	69,119
Norway . . . . .	14,432	229,203
Canada . . . . .	28,154	52,886
Other Countries . . . . .	2,038	16,600

Here we have a valuable rise in Canada's export trade to this country and a sign of progress in the market here. For comparison I will quote the U.S.A. exports here and Canada's for three years.

	1914. Tons.	1917. Tons.	1918. Tons.
Bleached chemical pulp (dry)—			
Canada . . . . .	306	...	...
U. S. A. . . . .	1,114	860	208
Unbleached chemical (dry)—			
Canada . . . . .	12	13,522	1,649
U. S. A. . . . .	182	19,456	2,256
Chemical (wet)—			
Canada . . . . .	1,461	...	...
U. S. A. . . . .	...	...	...

### No Boom Predicted.

In some of my recent notes I indicated the idea of a boom in the British paper trade. There was a great deal of talk about it in the press and other circles, but from recent returns and conversations I have had with millmen I am now convinced that some of the mills here are not yet successful in reaching their fullest capacity, in production. Some had to close down during the strike and others are so much behind in their production that new business is refused, because they find it somewhat difficult to produce their old orders. Therefore, to talk of a boom in the British paper industry, is rather an early matter.

### Mr. Lloyd Harris.

Mr. Lloyd Harris, the Canadian Trade Commissioner, is on his way home. Before leaving he was entertained at luncheon by the Canadian Association and there was a very distinguished gathering to meet him, representative of law, journalism, military, naval, pulp and paper. I feel we have lost a valuable man. Indirectly I have heard eulogistic expressions of Mr. Lloyd Harris's work and the capable way he handled business concerning the Dominion. What is England's loss is Canada's gain. Shrewd and level-headed, Mr. Lloyd Harris made hosts of friends here. Lord Beaverbrook, who knew Mr. Harris like a book, regrets his departure, and Colonel W. Grant Horden, M.P., who presided at the luncheon, hit the nail on the head when he said:—"I do not think there is to-day a living man with the same extensive knowledge of the industrial and trade position of Canada or one more capable of developing Canadian trade than our guest Mr. Lloyd Harris." Is not this a great compliment paid to a great man in the presence of a critical and great audience? Mr. Harris was out and out for Canada and its trade and a more general or kind-hearted representative one could not conceive. On this side of the water we are all the poorer for want of his presence and sound judgment.

Now that the British market is thrown open to foreigners, the question of giving Canada preference in it must be tackled—and tackled with a vengeance. We would get nothing unless we ask for it, and if we cannot get it by asking we must demand it from the Imperial Government. Canada has sacrificed a great deal in this war. She gave her best—her boys and her money—and in return she must enjoy a free and open market in this country. That is the feeling among Imperialists to-day and it behooves Canadian millmen to take up the subject without further delay.

I strongly advise the pulp and paper men of Canada to study the editorial article that appeared in the "Pulp and Paper Magazine," under the caption of "Turning Down Orders," of October 2nd. It summarises the whole position and my advice to manufacturers is to state their terms to the Imperial Government and demand them. What is the position to-day? The biggest and most successful newspapers in the country are printed on Canadian paper to-day, the sulphite from the Dominion is equal to the Scandinavian and the ground wood is a grade better. Consequently the question of giving preference to Canada must be taken up before it is too late and surely the Dominion has some strong men to persuade the authorities here. Look at the shipping side of the question. It is a scandal to see the way the manufacturers are handicapped to-day over it. Canada must demand her rights, but these she will not realise until her voice and power are heard and felt.

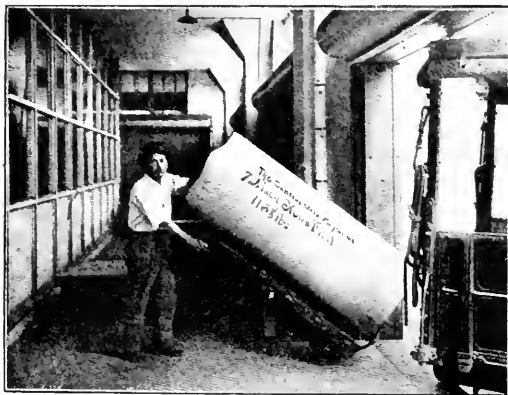
### A HANDY TRUCK FOR BIG ROLLS.

Anybody can handle a 1,138 pound roll of newsprint with one hand—it's all in the method.

A big 72-in. roll of newsprint used to be bugbear for the men in the shipping room to handle. It took a skilled truckman to get the balance and then it was some knack to hold this balance so that the weight of the roll would rest on the wheels of the trucks and not on the truckman's shoulders or go spinning off to the front. When loading on or off of a truck these heavy rolls presented their problem also. Two or three men were often required to handle one roll, and then there was the danger of losing the balance of the roll and the consequent danger to the men and the straining of strength to get the roll back on the truck.

It took the ingenuity and resourcefulness of Mr. William Page, of the shipping room of the Central Ohio Paper Co., to make a simple device for the truck with which he or a novice may handle a roll of paper of any size with one hand—and without the slightest danger of the roll getting the best of him.

How did he do it? Three pieces of 2 x 6 about two feet long, four bolts, two iron hinges or brackets, a



large ball bearing revolving easter and a few iron braces and screws were his materials. Two of the 2 x 6's were bolted together and notched at the top to fit the uppermost round of the truck. The uppermost round was taken for the brace because the center of gravity of the truck loaded or unloaded would then be a trifle closer the handles of the truck than the wheels and this would keep the truck from tipping up. The other 2 x 6 was fastened on one end to the axle of the truck by iron brackets and at the other it was fastened to the bolted-together 2 x 6's—the two pieces making a perfect right angle. The large revolving easter was then put in place.

Whether the truck is loaded or unloaded the weight of the truck and its load is now carried on the front wheels and on the large revolving easter. And another feature is that the upright brace is not fastened to the truck so that the truck can easily be tipped downward to get a purchase.

Here we have efficiency and safety. If the idea is worth anything to you use it. We are glad to pass it along.—From "Copeo Facts," published by Central Ohio Paper Co., Columbus, Ohio.

### NEW CATALOGS AND PUBLICATIONS.

#### Belt Speeds and Horse Power.

Messrs. Sadler & Haworth, manufacturer of "climax" and "amphibia" waterproof leather belts, have just distributed a unique and helpful souvenir. This consists of a celluloid envelope with two slits on each side. Inside the envelope there slides a piece of cardboard with a table printed on each side, one representing Amphibia and the other Climax belts. The tables carry figures showing speed of belt in linear feet per minute, the horse power transmitted for each 500 feet of speed for various widths of belt from 1 to 10 in. for Amphibia and 10-20 in. for Climax. By sliding the card so that the speed in question comes opposite the speed slot one reads the horse power for both double and single belts of that particular speed without being confused with irrelevant figures.

We are sure Sadler & Haworth, 511 William St., Montreal, will be pleased to send a calendar to anyone interested.

#### Beveridge Calendar.

The Beveridge Paper Company, Limited, Montreal, have recently sent out a very attractive little calendar of post card size with a return postcard on which the recipient of the calendar may indicate his needs in the line of paper. The calendar bears the statement "We do not want all the business, but we would like to have yours."

#### Swenson Evaporators.

The Swenson Evaporator Co., of Chicago, which has supplied a large number of installments for paper mills has issued a four-page leaflet describing a new type of evaporator for liquids that are damaged by high temperatures. Illustrations and diagrams are included.

#### Another Jeffrey Catalog.

Jeffrey Catalog No. 210 describes their pivoted pocket carrier and shows a number of typical illustrations. One of the features is the ease with which the automatic tripper can be located at any point in the horizontal runs. It is particularly adapted to the conveying of coal, ashes, lime-stone and other mineral substances used in pulp and paper mills. At the end of the catalog are a few pages devoted to the Jeffrey single roll coal crusher which can be used to advantage in connection with mechanical stokers.

### TEST LINERS AND CHIP BOARD.

The affinity of paper for water necessitates that great care should be taken in the handling of test liners, for if it is allowed to absorb excess moisture, the fibres will swell and become limp, and pull apart, leaving a weak Mullen test. The essential part of test liners is a good strong fibre, not only for good bending scores, but a good puncture test.

In the manufacture of chip board, you have one of the cheapest papers made. No Kraft pulp or any sort of fibre papers are used in the manufacture of this grade. The paper stock used in this grade is mostly the refuse of paper stock after the better grades have been sorted out, along with boxboard, scrap, etc.

This grade goes through the same manufacturing process as the test liners, but is not treated in any special way with chemicals like test liners, and is run more bulky, not being calendered very hard. As it contains little fibre, it offers a very slight resistance to puncture tests.—Fibre Containers.

## The Duties of a Third Hand

By PAUL SMITH.

This article is the third and last of a series by Mr. Smith in the "Paper Industry." Articles explaining the duties of machine tenders and back tenders have already appeared in the Pulp and Paper Magazine.

Now, Mr. Third Hand, did it ever occur to you, that you would be a fine back tender if you were given the opportunity. Sure it has, for any normal man wants to go ahead and not be a stick-in-the-mud. But, along comes some croaker, who shoots it into you that you don't stand a chance, because the Boss Machine Tender does not like the kind of necktie you wear, or because he has a thirty-second cousin that was born for the special purpose of getting the next chance as a back tender, and ten times out of nine, you swallow line, hook and casting rod.

The result is that you go around with a chip on your shoulder, slack up in your gait, and swear to yourself that you aren't going to do any more than you have to, and every time anyone needs your assistance, you are going to be "lookin' the other way." If you have anything at all from your neck up, you find that after a few day's experience along this line, you are working harder than ever, because the rest of the crew is treating you likewise and letting you go it, on your own. When you come to, it's already all over but the shouting, and somebody else who wears the right kind of a necktie, has got the new opening for Back Tender.

### *Cleanliness.*

Don't let the croakers get your nanny, keep a stiff upper lip and work together with the balance of crew, set an example for the Fourth and Fifth hands to follow, and see that they do follow it. Be sure that you have their assistance in keeping your machine and machine room floor spotless, picking up any solid objects such as iron, glass, or wood, so that no one may be endangered thereby, and prevent any of the finished rolls from being damaged. At the same time do all you can to learn the duties of the back tender, and you will be surprised how soon you get your advancement and how pleasant it will be for to get along in your new position, when you are prepared to fill the bill.

### *The Back Tender Understudy.*

Make a study of where the exact stations of the fourth and fifth hands ought to be to accomplish the best results with the least amount of effort. See that they keep the calenders, reel and winder looking like new all the time, and that they assist you in keeping the doctors on the press and calender rolls clean, being sure that they use the steps provided and that their shoes, if they are wearing any, are in condition to get a firm foothold that will prevent their slipping and injuring themselves.

Whenever the Wires, Felts, or Jackets, are being renewed or repaired be sure that you are on hand, ready to make yourself useful to the machine and back tenders while this work is going on. This will enable you to learn considerable of the duties pertaining to the position of back tender, which is the next step in your advancement, and the position which you should be ready to fill at any time the opportunity offers. You are the back tender's understudy, therefore you should be ready to play the part at a moment's notice. The real measure of your efficiency is, how much assistance you give the machine and back tenders, in case of mis-

haps, breaks, changing of the wires, felts or jackets; the care you exercise in removing all defective spots in the reel and the perfection of the splices you make; so that no complaints from the customers come into the front office about the paper made on your machine.

### *Washup Duties.*

Whenever a washup is called for, you should be ready to double up the felts, and pull them out again after they have been washed, being very careful not to stand in front of the presses when doing so, as it may be the cause of serious injury or loss of life. Should the washing of the felts be finished before the wires are cleaned, give a hand on the wires, or do any other work that the machine tender believes needs immediate attention to permit of starting the machine in the shortest possible time.

When the back tender is putting the lever weights on the presses and calender, go right along with him and assist him in making the necessary adjustment, after you have made sure that the doctors on all the press rolls are cleaned thoroughly.

### *Starting Up.*

After the paper is on the wire, it is your duty to be prepared and ready to skin a tail for the back tender, to enable him to lead the paper over the dryers. This should be done quickly and accurately so that it will not break and require a new start, losing a lot of valuable time. Just as soon as the paper has been taken over the dryers, take your station in front of the calenders, ready to pass the paper through the calender stack, being extremely careful when throwing the paper into calender rolls, not to get your fingers pinched. When the paper has come through the last pair of calender rolls, help the back tender to get it started on the reel.

### *Inspection.*

After the paper is started on the reel, inspect the rewind and slitters, reporting to the machine tender any defects that may need repair or renewal. Measure the distance between the slitter knives very carefully, to see if the measurements conform with the sizes ordered on the machine order ticket, so that there will be no chance of slitting the rolls the wrong width. See that there are enough cores of the right diameter and width at hand, to last your full tour, and remove any oversize or bastard cores to prevent any of them from getting mixed with the right cores, being sure that you do not leave any standing on end, as they are apt to fall and injure somebody, and have a set of the proper sized cores placed on the shaft in line with the sheet. When the reel is full and the next reel started, get the full reel over to the rewind immediately, to prevent any possibility of the reels accumulating, which will cause confusion and delay trying to catch up again, being careful when transferring reels not to hook up the yoke shaft while the reel is still moving: be sure to wait until it is at rest.

### *Making a Perfect Splice.*

Be sure that all crushed spots, slime holes, imperfect paper and breaks in the reel, are torn out and replaced by a good splice. This is one of your most important duties, as the finished paper is judged, in a large measure, by the kind of splices made, and it is up to you to make all your splices as perfect as possible, so that there will be no complaints from the customer on this score, as it reflects not only on the entire machine crew, but seriously injures the reputation of the mill. In making a splice be sure you always have in mind the following

don'ts, for it will then be well nigh impossible for you to make a poor splice:

*Don'ts.*

Don't lay the tape any closer than one-half inch to the trimmed edge of sheet when making splice.

Don't trim the tail of the sheet any closer than one-half inch to the splice; trimming the sheet too close may cause the tape to squeeze out over the edge.

Don't let the tape lap over the edges of the reel, as it will cause several thicknesses of paper to stick together when the roll is being unwound.

Don't try to seal a splice with a cold sealing iron, it can't be done.

Don't bring your iron across the splice with a hop, skip and a jump effect, but draw it slowly with the same amount of pressure through the entire length of the splice.

Don't make a splice with the tail end out of true with the edges of the reel, as it will throw wrinkles in the sheet.

Don't forget to insert a flag to mark every splice you make in a roll.

*Correct Record of Finished Paper.*

After the rolls are run up to the right diameter, help to take off and weigh them, giving the correct weight to the back tender, who will write it down on the machine production chart for his tour of duty.

The real secret of successful accomplishment, for any third hand, is to always work with and never against the balance of the machine crew; never holding back when he can be of assistance to the machine or back tenders, and always being ready to instruct the fourth and fifth hands in the proper performance of their work. If this course is followed consistently, you will find that you are accomplishing more and better work with less effort for every one concerned, and that you will be slated to fill the next available opening for back tender. The crew wherein every member is properly trained in the performance of his duties and where they are always ready to assist one another in all emergencies, will accomplish its work with fewer mishaps and less confusion, which means with less effort on the part of the individual members composing the crew.

**EFFECT OF TIME OF CUTTING TIMBER ON ITS DURABILITY.**

Many of the theories which have been advanced regarding the durability of wood attribute too much importance to the time of cutting. As a matter of fact, the time of cutting has very little effect upon the durability or other properties if the timber is properly cared for after it is cut. The method of handling posts, poles and logs at different times of the year, however, does influence their durability.

**Late Spring and Summer Cutting.**

Posts, poles, and other rough products cut in late spring and early summer are more likely to be attacked by insects and fungi because the wood is freshly cut and in the most favorable condition for attack at a time when insects and the spores of fungi are most active. Seasoning also proceeds more rapidly during the warmer months and may cause excessive checking. If the wood is peeled when cut and piled openly on skids for seasoning the opportunity for decay will be reduced to a minimum, but checking will not be retarded. In no case should the wood be allowed to lie in direct contact with the ground. If checking is an important consideration it can be reduced somewhat by locating piles in a shaded but dry place. The bark

peels most easily in spring. It can be removed at any other time of the year but the labor and expense will probably be greater.

Timber cut in late fall and winter seasons more slowly and with less checking than during the warmer months, and when proper storage or handling is impracticable, winter cutting is best. Fungi and insects do not attack wood out of doors in cold weather and by the time warm weather arrives the wood is partly seasoned and somewhat less susceptible to attack. It is for this reason that winter cutting is advantageous and not on account of a smaller amount of moisture or sap in the wood in winter as the popular belief has it. There is practically no difference in moisture content of green wood in winter and summer.—Technical Notes, U.S. Forest Service.

**WATERPROOF EXPORT PACKAGES.**

The waterproofing of export packages is very important. Hardware, textiles, clothing, food products such as bisenits, crackers, candy and breakfast foods, furniture, vehicles, and many other products, require waterproof protection. The hazards of damage by moisture may be any or all of the following, dampness in the hold of the ship, surf spray in unloading in lighters, or heavy rains. When ports and terminals are congested, packages often lie around for days with no covering. Machinery and vehicles should be well slushed with a compound which is stiff enough to adhere and not drop off and which does not contain grit or any injurious acid.

The War Department used a compound consisting of four parts light slushing oil and one part white lead with good results. Boxes, crates and bales should be lined with a strong, strictly waterproof paper. The standard paper adopted by the War Department for this purpose was duplex asphaltum waterproofed paper made of two sheets of No. 1 sulphate kraft cemented together with asphaltum. This paper was found to have remarkable resistance to the penetration of water and also possessed of great strength. For lining boxes and crates the weight of the paper used was two 30-pound papers cemented together and the weight used for bales was two 60-pound papers cemented together with the outside sheet also saturated with asphaltum.

Marking and packing are very closely related in that if a package is improperly marked and goes astray all the attention paid to good packing is lost. In many cases foreign buyers give marking directions, and these should be carefully followed. The destination of the goods and other markings should be plainly stenciled in large letters with waterproof stencil paint.

Some foreign countries have marking rules, and in the case of shipments to these countries these rules should be complied with. Duplicate markings should be placed on a tag inside the package so that the destination of the package can be learned if by any possibility the markings on the outside become defaced.—Association News.

**CUTTING OF TIMBER SUPERVISED IN QUEBEC.**

It is the intention of the Provincial Government to survey carefully the cutting of timber throughout the lumber camps of the province. A large number of inspectors from the department of Lands and Forests, under the direction of Mr. G. C. Piche, chief of the Forestry Service, have started their organization, and will visit more than 2,000 of these camps during the coming winter.

## Prices Will Stay Up in Britain

(From our London Correspondent.)

London, October 29, 1919.—On every side I am hearing complaints of the high cost of paper at present in England, except in the case of newsprint. It was hoped at first by the consumers that when the markets were thrown open to foreign countries there would be a reduction in prices, but experience now proves that there is likely to be no change. The position of the manufacturers today is that coal is so dear and pulp so high in values that they cannot sell at lower rates. Added to these there is the great increase in the wage bill of a mill, the high cost of repairs and chemicals, and lastly, the slowness of transport and high cost and scarcity of freightage at sea. To forecast what the future has in store for the mills and consumers is a difficult problem. Buyers want the cheapest market, but it is difficult to get and the prediction of millowners now is that prices of paper will go up again. Since 1914 the advance in all kinds of papers is considerable and five times more is paid for esparto papers. The labor problem has all along been a knotty question in the mills and outside them. Threats are still hanging in the air and this week negotiations are going on over agreements arrived at some weeks ago. There is a feeling of unrest pervading these Islands just now and it is feared no papers will be reduced in price until the economic situation is solved.

### Paper Situation; Comparisons.

In the production of fine papers, such as writing and printing paper, we must remember that Germany, Austria, France and Italy are out of the market. No supplies are arriving from these countries, where the demand exceeds the supply. In Italy for instance, the Government has announced that they will relieve paper of all import taxes up to the 31st of December next. This is unusual for the Italians and it shows the dire straits the country is in as regards the supply of paper. Finland is also manufacturing very little paper, as the country is not settled yet and many mills are still closed. Therefore the only countries manufacturing paper for export today are Canada, U.S.A., Scandinavia and the United Kingdom, newsprint being exported from Scandinavia, Canada and the States. Consequently, except in the case of newsprint it must be expected that with keen competitors like Germany and Austria out of the market prices will be on a high level. Fine printing paper in 1912 was imported here from Germany to the extent of 3,209½ tons, and kraft paper reached 40,420½ tons; fine printings on reels, 5,670¾ tons. Today the market is minus a supply of this total. There is an ample supply of newsprint in the market here and the Canadian and Newfoundland products are quite evident. By the way Germany in 1912 sent the United Kingdom 34,827 tons of unbleached sulphite and 2,080 tons of bleached sulphite. Canada's quota of ground wood was 42,398 tons.

### Imports of Kraft.

The British market is a good one for kraft paper and large quantities are imported from Scandinavia. Russia, Germany, Austria and one or two other contributing sources are out of the market since 1914 and there was a slight falling off in the supplies from Canada. In 1918 Canada sent 68½ tons, compared with 97½ tons in 1914. On the other hand British mills sent to Canada 804 tons in 1914 and 24½ tons

in 1918. These figures are recorded in a return just issued by the Trade Board. The bulk of the supplies during the war were received from Scandinavia and the U.S.A. Today kraft is firm in price, with a tendency to react a higher level. Usually at this period of the year there is a good demand for all kinds of kraft. Consequently, an enlivened market is expected within the next month.

### Fine Printing Paper.

Printing paper turned out by the mills and suitable for a good class of trade such as book-work, government documents and books, commercial trade, etc., finds a good outlet within the Empire. In 1914 about 79,376 tons were exported, in 1915, 72,829 tons, and in 1918, 11,298½ tons. Canada took 36½ tons in 1918, compared with 4,036½ tons in 1914. Australia and New Zealand are the best customers of the British mills for printing paper.

### New Firms.

Since the signing of peace it is remarkable to walk round London and see the number of new firms that have come into existence as papermakers' agents and paper merchants. They are springing up like mushrooms all over the place. Some combine printing and paper selling together in a small way. These young offsprings are watched with a lynx eye by the old established and staid agents and merchants who can tell you just as much about the manufacture—and who is and who is not making it—of paper as the mill owner himself. It may be a healthy sign for these mushroom firms springing up. I hope it is in these hard times and I hope they will have success. The more paper sold, the more pulp is needed.

### Newsprint.

During the last fortnight there has been a slight falling off in the consumption of newsprint from the newspapers' point of view. This is probably accounted for by the fact that many of the newspapers during a period of dullness have reduced the size of their sheets or knocked off several editions. I was looking at one office the other night and found that close on 1½ tons had not been used during the day and night, which, if circumstances were otherwise, would have been easily eaten up and probably more with it. Prices of newsprint today are firm; Norwegian £32 a ton in London.

### Pulp News.

Pulp prices remain unchanged. There is a tendency for quotations to harden for sulphite for deliveries in December and January. For moist ground-wood the demand is fair and prices show no alteration.

Large shipments of pulp have arrived during this month from Canada on the steamers "Gyp," "Manchester Hero," "Kanawha," "Canadian Signaller," and "Grelsdale." The shipments consist of ground wood and unbleached chemical—the former amounting to 10,704 tons from Chicoutimi and the latter to 1,160 tons.

Good supplies are also being received from Norway. At this time of the year supplies are heavy from this source on standing contracts.

There is a strong rumor in London that pulp prices all round will shortly reach another high level.

### Photographic Paper.

The first sign of any reduction in the price of paper has come to my knowledge this week and it refers to photographic paper, a large amount of which is now being used since war ended. A cash discount is given.



## Technical Section



**A-3. Algerian mallow (*Lavatera cretica* L.) as paper-making material.** La mauve d'Algerie et son utilisation en papeterie. L. Vidal & E. Douron. *Le Pape-terie*, 41, 192 (July 25, 1919). The possibility of utilizing this plant was studied in 1918 by the French School of Paper-Making at Grenoble, at the suggestion of Mr. Michony. The latter has devised a simple and practical means of separating the bast fibres by means of a rotting process which is carried out in the field as soon as the plant is cut, and which requires but very little water, an important point in that country. The report of the school on this fibre was essentially as follows: It is a jute substitute, derived from a plant closely allied to that which furnishes jute, and having the same appearance and microscopical characteristics. It is less highly lignified, and consequently more supple. The fibres are composed of ligno-cellulose, and are colored golden yellow with chlor-iodide of Zn and red with phloroglucine hydrochloride. They contain 57 per cent cellulose. For paper-making they may be subjected to a slight cooking to retain the maximum strength, or to a thorough cooking to obtain a bleachable pulp. On a laboratory scale, bleaching hot with 18 per cent bleaching powder did not give satisfactory results. Sheets of paper made from the pulp were quite strong, especially those from the unbleached pulp. The pulp consists of practically pure cellulose, the fibres being about 2 mm. x .02 mm. It has a high felting power and the tenacity is slightly inferior to that of jute. If the cost is sufficiently low it would be useful for paper-making; but otherwise it could be used for textiles.—A.P.C.

**B-2. Forest investigation.** Amer. For., July, 1919, p. 1218. Discusses the program of forest research now undertaken in the United States. The necessity for more accurate information as to forest conditions is fully realized, in order to formulate plans of cutting which shall leave cut-over lands in a condition to produce another forest. See also editorial at page 1237 of same issue.—C.L.

**B-2. Forest opportunity on pine lands in the south.** F. W. Besley, State Forester of Maryland. Amer. For., April, 1919, p. 983. "The forests of the south have been the chief source of timber supply for more than two-thirds of the population of the United States for many years. The exhaustion of the original forests is not only going to remove a chief source of wealth to the south but is going to have a far-reaching effect in the country at large." Little can be hoped for through private ownership under present conditions, and it is not likely that much can be expected from private initiative for many years to come. It is manifestly the duty of the State to lead the way and to place timber growing in the south upon a permanent basis.—C.L.

**B-2. Use but do not abuse farm woodlands.** C. R. Tillotson, U.S. Forest Service. Amer. For., Nov., 1919, p. 656. Gives rules for the utilization of material from farm woodlands.—C.L.

**B-2. Is there profit in planting timber trees?** G. C. Piehe, Can. For. J., Sept., 1919, p. 368. Develops the argument that reforestation of non-agricultural lands will be profitable, and discusses the means by which this may be accomplished.—C.L.

**B-2. When trees grow—A novel study.** Prof. J. S. Hlick, Can. For. J., Sept., 1919, p. 351. The results of daily measurements of 200 trees, with bearing upon the question of planting and trans-planting.—C.L.

**B-2. Hatching trees by the million.** G. C. Piehe, Can. For. J., Sept., 1919, p. 355. Describes the nursery and reforestation work of the Quebec Forest Service.—C.L.

**B-2. Future facts that the present must face.** Hon. E. A. Smith, Can. For. J., Sept., 1919, p. 362. Discusses the research work handled through co-operation between the Crown Lands Department of New Brunswick and the Commission of Conservation.—C.L.

**B-3. Tree Values.** Albert F. W. Viek, Amer. For. Dec., 1918, p. 722. Discusses tree surgery.—C.L.

**B-9. A National forest policy.** Henry S. Graves, Forester U. S. Forest Service. Amer. For., Aug. 1919, p. 1281. Discusses the need for a National forest policy in the United States to provide for the perpetuation of the timber supply. Advocates a Federal act authorizing the Secretary of Agriculture, in co-operation with any state to formulate plans for forest protection and for the control of timber cutting within that state; such plans to become effective only after the state legislature has passed appropriate legislation, including adequate appropriation to co-operate with the Federal Government in putting them into effect. This raises the whole question of enforced forestry practice on privately owned timber lands, chiefly valuable for forestry purposes. See also discussions of the proposed program by R. S. Kellogg, Secretary, News Print Service Bureau, Geo. H. Wirt, Chief Forest Fire Warden of Pennsylvania, and Alfred Gaskill, State Forester of New Jersey, at pages 1282 to 1284 of the same issue.—C.L.

**B-9. A National Forest Policy.—Why and how.** Amer. For., May, 1919, p. 1049. A discussion of the forestry program advocated by Colonel H. S. Graves, Forester U. S. Forest Service. 97 per cent of the timber and other wood products used in the United States is obtained from privately-owned forests and less than two per cent of the saw mills of the country are operating on public forests. Private owners hold four-fifths of the standing timber in the United States. If provision is to be made for adequate timber supplies in the future, particularly saw timber, some provision must be made under which the forest lands now in private ownership will be devoted to forestry.—C.L.

**B-9. Forestry as a vocation.** Prof. H. H. Chapman, Yale Forest School. Amer. For., May, 1919, p. 1075. Discusses forestry as a profession and forecasts the extensive employment of foresters by private as well as Governmental agencies.—C.L.

**B-4. Forest casualties of our Allies.** P. S. Ridsdale, Editor, American Forestry. Amer. For., March, 1919, p. 899, and April, 1919, p. 963. Describes forest conditions in France, Belgium, Great Britain and Italy and the work of the American forestry regiments. The war losses and loss in reproduction value of the destroyed forests of France is estimated at eight hundred million dollars. It will take France fully 100 years to fully recuperate from these forest losses.—C.L.

**K-4. The use of esparto pulp in the manufacture of paper.** (La pate d'alfa dans la fabrication du papier.) E. Arnould. *Le Papier*, 22, 250-3, (Aug. 1919.) This pulp is prepared by an alkaline treatment which effects a complete separation of the cellulose from the ligneous and other substances of the plant, followed by a special process of refining, and finally by the usual bleaching with chloride of lime. The resulting product is a very high grade pulp, serving as an admirable filler in high grade papers, but altogether unsuited to be used alone, except in certain very special kinds of paper for which there is not much demand. It follows that the use of esparto is not likely to be greatly increased in the near future, unless some process is devised whereby the pulp will be given properties enabling it to be used in papers of a certain strength. The possibilities in this direction are very great, and the author is at present working on such a process and has great hopes of success.—A.P.-C.

### TECHNICAL QUESTIONS.

(From *La Papeterie*.)

**Quest. 1.** I have just started working as foreman in a mill making semi-fine papers. I notice that there are many breaks in the dryers but hardly any at the wet presses. The tension of the sheet varies astonishingly at the dryers. There are also many breaks at the calenders. Could somebody tell me what percentage of broke should normally occur at the dryers and at the calenders?

**Ans.** A frequent cause of breaks is to be found in the improper relative adjustments of the various parts of the machine. A change in the adjustment of one part frequently requires a change in the adjustment of other parts, and this is often overlooked. At the wet end of the machine this merely results in a slight defelting of the fibres, and there is usually no break; but at the dryers the fibres will not yield so readily, and the sheet breaks. If the dryers drain intermittently the drying will be irregular and this will result in breaks.

**Quest. 4.** Can any absolutely permanent glaze be obtained with only one glazing, or are two glazings necessary to obtain the desired result?

**Ans.** A washable glaze is obtained by coagulating the colloid (gelatine, casein, etc.) Various gelatine coagulants may be used, but the most convenient on the whole is chrome alum. The permanence obtained in this way is usually sufficient, though not absolute, especially with aniline. Better results are obtained with

casein by adding formaldehyde (as a 10% solution) to the bath, in amounts not exceeding 2% of the dry weight of casein. If the results obtained are not satisfactory, the amount of formaldehyde may be increased by adding alternate portions of formaldehyde and ammonia, the latter retarding coagulation which would otherwise occur before the bath could be utilized. The ammonia evaporates on the dryers and the excess of formaldehyde gives the required permanence. There is always the danger, however, that traces of ammonia will remain, which in time might change the color; and moreover ammonia cannot be used with all colors. In this case the paper may be subjected to the action of a 5-10% formaldehyde solution. In the case of glossy papers, glazed with gelatine and chrome alum, the permanence is appreciably increased by calendering.

**Question 9.**—In the mill where I am machine tender it often happens that purely chemical pulp is not sufficiently hydrated. In spite of my putting in all the size, the sheet is already drained when it reaches the first suction box; it becomes "fuzzy" at the couch rolls; and then breaks. Could somebody help me out of the difficulty?

**First Answer:**—If the sheet is too much drained when it reaches the first suction box,—

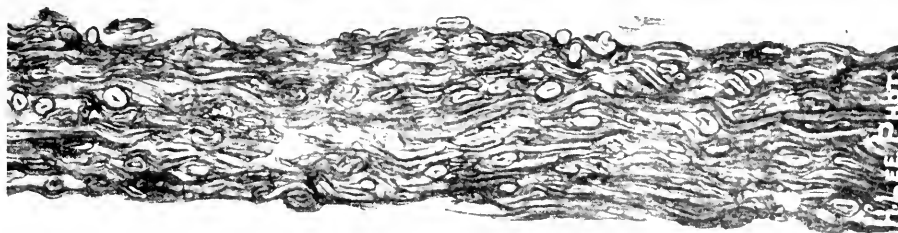
1. Raise the end of the wire so as to give more slope. The water will thus remain longer on the wire.

2. When making paper entirely from chemical pulp, remove some of the table rolls.

3. Increase the frequency and decrease the amplitude of the shaking.

If the sheet is "fuzzy" at the upper couch roll, the most practical method is to place a vessel of soapy water (or water in which sliced raw potatoes have been steeped) under the doctor. A strip of felt dipping into the water and touching the couch roll will keep the latter moist.—Maurice Cartiaux, Paper-making engineer.

**Second Answer:**—This defect is often noted in papers made from chemical pulp, and especially in thin papers. It is usually due to "pity" sulphite, and nearly always to insufficient beating or refining. To remedy these defects as far as possible on the machine use a large amount of size and a rather intense shaking so as to obtain a better felting in the sheet and to decrease adherence as it passes through the first couch roll. This is also the best way to make up for insufficient beating. Tighten as much as possible the presses of the felt and of the first couch roll.—



Microphotograph showing cross section of a section of a piece of fine writing paper, cut across the machine direction. Magnified 196 times.—Courtesy of H. N. Lee, formerly microphotographer, Forest Products Laboratories of Canada.



# UNITED STATES NOTES

The manufacture of paper stock from cotton linters, a recent discovery that may serve as a solution of the problem of replacing the rapidly diminishing supply of raw material obtained from pulpwood, is to be undertaken by the Proctor & Gamble Company, the widely known Cincinnati soap concerns. It is reported that this company, operating through its subsidiary, the Buckeye Cotton Oil Company, includes in its plans the erection of two paper mills—one to be located at Memphis, Tenn., and the other at Augusta, Ga. The present program, if carried out, will have the wheels of the new plants turning before next spring when it is expected that an average of 75 tons of chemical pulp from cotton linters will be produced daily at each mill. Shipments of this product will be made principally to northern paper mills.

Announcement has been made of proposed developments by the Crown-Willamette Paper Company of its holdings in the Youngs river district, a few miles above Astoria, Oregon. The plans call for the erection of a 60-ft. dam to electrically harness Youngs river falls. Power will be furnished for an electric plant which will be the center of a number of industries to be located in that vicinity. The company announces a proposal to erect a grinding and pulp mill with a capacity of 100 tons of paper pulp daily. Work of clearing the site for the dam has been completed.

The Royal Card and Paper Company of New York City recently received authorization from the Secretary of State at Albany, N.Y., to increase its capital stock to \$300,000. The company was originally incorporated with a capitalization of \$150,000.

The first shipment of aniline dyes, 165 barrels, that has come from Germany since April, 1917, arrived last week in New York City by the Holland-America liner *Nieuw Amsterdam*, consigned to the New York Color and Chemical Company, 98 John street. It was said by an official of the company that the dyes would be disposed of at practically the same rates that prevail in the American market. The importation is merely a drop in the bucket, the official said, and would have no effect on the market. It consists of dyes in which there is a shortage in the United States.

The semi-annual meeting of the American Pulp and Paper Mill Superintendents' Association held Thursday and Friday of last week at the Hotel Congress, Chicago, brought together superintendents from nearly every mill in the country. A program had been arranged which provided something to do for practically every minute of the visitors' two days stay in Chicago. A dinner and entertainment in the Florentine room of the Hotel Congress Thursday evening and a banquet served in the same place the following night were among the chief social events for the gathering and visits of inspection to the plants of the United States Rubber Company and the Chicago Mill and Lumber Company were made by two parties of attending members at the conclusion of the first day's business session. The meeting Friday afternoon was a combined one of the printing and paper mill superintendents. Among the principal papers read at

the several sessions were the following. "Industrial Relations," by George P. Jambrecht, chairman of the Industrial Commissions of the United States and Canada; "Paper Mill Cost System," by W. T. Schmitt, assistant treasurer of the American Writing Paper Company; "Preservation of Paper Mill Roofs," by K. Barth, wood preservative expert of the Barrett Company; "Manufacture of Coated Papers," by E. T. A. Coughlin, of the Monarch Paper Company, and "Testing of Papers," by Otto Kress, of the Forest Products Laboratory of the University of Wisconsin. A meeting of the Kalamazoo branch of the association was held at the Park-American Hotel, Kalamazoo during the week of October 19.

An investigation to include both laboratory and field tests will be undertaken by the Paper and Textile sections of the Bureau of Standards at the request of the War Department for the purpose of obtaining a material that will serve as a satisfactory substitute replacing jute burlap in the making of sandbags and for camouflage work. Jute burlap will be used as a standard and the substitutes must at least equal it in strength and durability. Samples of available material are now being obtained for the tests. It is desired, if possible, to find a substitute material produced in the United States so that there will be a large supply on hand at all times. Sisal hemp and low-grade cotton fabrics, reinforced paper, and also crinkled and smooth paper will be used in the experiments.

Included in the scope of the fourteenth decennial census in the United States on which the actual enumeration work will begin January 2, 1920, will be forestry and forest products, two subjects never covered specifically by any preceding census. The compilation and gathering of statistics bearing on these matters will be in charge of a special force of experts. The accurate and comprehensive figures gathered concerning this vital natural resource will be much in demand, and the comparisons made with conditions existing before the war will be of great interest.

Because of the tremendous domestic demand for newsprint, American exporters of paper are experiencing great difficulty in obtaining a sufficient quantity of paper to supply their foreign customers. The insistent demand for newsprint has sent the price up over seven cents a pound with the result that several manufacturers have turned their mills over to the manufacture of newsprint in preference to other papers. This has resulted in a shortage in other papers with a consequent increase in price. One authority in the trade, however, is of the opinion that the high level in the matter of prices has been reached. The fact that the Scandinavian countries, England and Belgium, are rapidly increasing their production of paper, he declared, would have a tendency to stabilize the price in foreign markets and would eventually have a direct effect on the American market.



# PULP AND PAPER NEWS

J. R. Evans, Montreal, representing the Export Association of Canada, who is leaving for Melbourne, Australia, was in Toronto recently calling upon the paper trade in the interest of export to the Antipodes.

Good progress is being made on the survey of the forest resources of Ontario by Roland D. Craig of the Commission of Conservation, and his staff. The renaissance work for the Ottawa River drainage area has been practically completed. Mr. Craig reports that all the timbermen and pulpwood limit owners have been very obliging in furnishing information and data and are anxious to see the survey completed and have it made as reliable as possible in order that reasonably accurate particulars of the actual forest situation in the province may be available.

The Kipawa Fibre Co. expect to have their new plant at Temiskaming turning out sulphite pulp next month and have let contracts for fourteen houses for the employees of the firm and more dwellings will be erected later on.

The Diamond State Fibre Co., Bridgeport, Pa., who, it has been rumored, intended opening a branch in Toronto, report that their plans are not yet fully developed and a definite decision will not be reached for some time yet.

The Nashua Gummed and Coated Paper Co, Nashua, N. H. who are establishing a Canadian branch in Peterboro, Ont., are enlarging their plant at Middleton, Ohio, and the capacity of the factory there will be doubled, according to present plans and specifications.

J. A. Bothwell of East Angus, Que., President of the Canadian Pulp and Paper Association, recently entertained at the St. James Club, Montreal, in honor of Lieut. E. D. Hyndman, M.C., of Sherbrooke, who was one of those decorated by the Prince of Wales with the Military Cross for valiant service overseas.

It is understood there will be no change in the name of the Toronto Paper Manufacturing Company, which was recently acquired by the Howard Smith Paper Mills of Montreal. The selling in Toronto and Ontario of the Cornwall mill and the mills at Beauharnois and Crabtree Mills, will be done by George A. Davidson, sales manager and C. F. Mansell, for very many years connected with the Toronto Paper Mfg. Co. W. J. Wallace will continue as mill manager and will still reside at Cornwall. The executive office will be located in Montreal. The new machine for the Howard Smith Paper Mills for the Beauharnois mill is built and the new finishing room is nearly completed, the roof now receiving attention. The new chimney, which will be 153 feet high, is up 110 feet. The new machine will be in operation in January next. It is understood that the Howard Smith Paper Mills propose changing over the Toronto Paper Mfg. Co., putting one machine on bristol boards, lengthening out the other machines and increasing the capacity of the plant to, at least, fifty tons a day. The Beauharnois division will make twenty tons, the Crabtree Mills twenty tons and thus the total output

of the Howard Smith Paper Mills will be about ninety tons a day. Equipment will be added to the sulphite plant at Cornwall, which will augment production to thirty tons a day. The Howard Smith Paper Mills, in order to manufacture economically intend to specialize in their different plants and will as far as possible confine each division to certain grades of paper and it is hoped to export a certain amount of the products.

N. G. Czowski, Montreal, manager of the Canada Box Board Co., spent a few days in Toronto last week on business and reports that the plants of the company are rushed with orders and are working to capacity.

Chief Justice Falconbridge, of Toronto, recently delivered judgment in favour of the Attorney-General of Canada in his suit against the Thorold Pulp Co., of Thorold. The company is assessed \$16,949 for surplus water used and wasted above the conditions of a twenty-one year lease to draw water from the old Welland canal for the purpose of manufacturing pulp.

Carl Sorenson & Co., of Fort William, Ont., have established camps in the neighborhood of Fort Frances, Ont., and intend to take out a large quantity of timber, railway ties and pulp wood.

S. J. Moore, of Toronto, President of the F. N. Burt Co., Limited, was re-elected President of the Canadian Wm. A. Rogers Co., Limited, at the annual meeting held last week in Toronto.

The first of the two new 166 inch machines, which are being installed at Espanola, Ont. by the Spanish River Pulp and Paper Mills, is now in operation and was started ten days ahead of schedule time, making five machines now in operation and increasing the output fifty-five tons a day. The new machine is running in perfect order.

A provincial charter has been granted to the Ste. Anne Lumber Company, Limited, with headquarters in Montreal and a capital stock of \$500,000. Among the powers conferred on the organization are to manufacture groundwood and sulphite pulp, paper, card board, etc.

Gagnon & Fils & Cie. Limited, with headquarters at St. George in Beauce county, Que., have been granted incorporation to manufacture and deal in pulp, paper and wood products and carry on a general merchandise business. The capital stock is \$99,500.

Many friends of John F. Ellis, of Toronto, late President of the Canadian Paper Trade Association and head of Barber-Ellis, Limited, congratulated him heartily this week on the celebration of his seventy-fourth birthday. Mr. Ellis is enjoying good health and has been in the paper line all his life, having established the present business of which he is President, in company with the late John R. Barber, of Georgetown, Ont., in 1876. Mr. Ellis is a former President of the Canadian Manufacturers' Association being one of the oldest members and is the Treasurer of that organization. He was also one of the founders of the

Commercial Travellers' Association and has held many other high and responsible offices.

The Hay Stationery Co., Ltd., with a capital stock of \$125,000 and head offices in London, has been granted a federal charter to manufacture, buy, sell and deal in account registers, loose-leaf, accounting systems, account books, stationery, etc., and to carry on the business of printers, publishers, lithographers, engravers, envelope, paper box manufacturers, etc. The incorporators are John B. Hay, M. G. Hay, B. B. Vantnyl, and A. J. Warrick, all of London.

A charter has been granted to the Great Eastern Paper Co., Limited, Montreal, with a capital stock of \$5,000,000, to carry on the business of lumbering and the lumber trade in all its branches and all other business incidental thereto, and to manufacture and deal in logs, lumber, timber, pulp, pulpwood, paper, etc. The incorporators are John W. Cook, K.C., Allen A. Magee, T. B. Honey and M. Goudrault and others.

Hon. Frank Carrel, proprietor of the Quebec Telegraph and member of the Quebec Legislative Assembly, was recently honored by Queen's University, Kingston, when the degree of LL.D. was conferred upon him in recognition of his valuable services to journalism and his contribution to Canadian literature.

Engravers Machinery Company, of Canada, Limited, has been granted a charter with a capital stock of \$50,000, and head offices in Montreal. The company is empowered to plan, design, build, manufacture and sell and deal in machines of any kind used in the art of engraving and lithographing, and to buy and sell etching tools, diamond points, steel dies, copper plates, lithographic stones, etc.

The Specialty Paper Mills, Ltd., has been incorporated with headquarters in Camden East, Ont., and a capital stock of \$325,000. The company is empowered to purchase, sell, import, export and deal in all kinds of paper and products of paper as well as timber, wood, wood pulp, sulphite, etc. The incorporators of the new company are: George O. Comfort, Carthage, N.Y., Chas. B. Wing, Cincinnati, Ohio, W. E. Houpt, L. F. Houpt, and Edward Kener of Buffalo, N.Y. The company has taken over the paper mills at Camden East, Ont., which until recently were owned and operated by the Bathurst Lumber Co., of Bathurst, N.B.

The Dominion Chautauquas, Limited, have been granted a charter with a capital stock of \$24,000 and headquarters in Toronto, to organize, maintain and operate courses of entertainment commonly known as Lyceum courses, to book talent for individual stands and transact similar business from time to time. Among the powers conferred upon the new organization is to publish books and periodicals and distribute advertising matter in support of the various schemes of the Chautauquas.

A new road from Monteith to Iroquois Falls, Ont., will next year put the residents of the paper mill town in communication with a source of vegetables, etc., at the Government Experimental Farm. It is expected that the missing link, a bridge 400 feet long across Meadow Lake, will be built this winter.

Caleb and Joshua, alias John Vanier and Chas. Murtagh, have returned to Iroquois Falls after an inspection trip into the matter of costs of living in similar towns in Ontario. Their report includes the prices of about 150 items of groceries, meat, and supplies. From a comparison of prices it seems that the Abitibi people are as well off as their brother paper makers else-

where. In many cases things cost less in the far north than in a much larger place like Sudbury or the Soo.

Plans for financing the merger of the Howard Smith Pulp and Paper Company and the Toronto Paper Co., will include the calling in of the present issue of \$475,000 preferred stock paying 7 per cent and giving in return the new issue paying 8 per cent.

It is stated by the Financial Post that the Abitibi Power and Paper Co. will have doubled its present output of 70,000 tons of newsprint in the next year or so.

J. J. Carriek of Port Arthur, spent several days in Montreal last week. Mr. Carriek has cutting rights on the Pie River timber limits and proposes to build a newsprint mill—sometime.

#### PRICE BROS. TO BUILD A NEW MILL.

Quebec, November, 11.—A big movement for the further development of the pulp and paper industry in Canada will be started in the province of Quebec shortly by the firm of Price Bros. and Company.

Statistics show that the manufacture of pulp and paper is one of the greatest industries which Canada possesses at the present time, the daily output of paper in this country being 2,200 tons as compared with 2,900 tons in the United States.

Of Canada's daily output, 260 tons are manufactured at Longueville and Kenogami by Price Bros. and Company, and machinery is being installed to bring this output up to over 300 tons a day.

The firm has plans for further expansion and in an interview given to-day, Sir William Price, the president of the company, outlined his plans as follows:

"My board has definitely decided to start work without delay on a large newsprint mill in the Saguenay district, with a capacity of between four hundred and five hundred tons.

"Work has already been started on the necessary water power and by May of next year, construction of the mill will be under way.

"A further machine is now being erected in our Kenogami mill. This machine would have been working now had it not been for the strike in England. This brings our present output up to 270 tons or, including Jonquiere, 325 tons per day of paper and board, in addition to sulphite pulp.

"When our new plant is operating our total output of paper and board will be in the neighborhood of 800 tons per day."

With the erection of the plant a new town will spring into existence. The site is about three or four miles east of Chicoutimi and the town will be called "Saguenay."

It is situated on tide water, and free from the usual tide delays that are experienced at Chicoutimi. An excellent level plain stretches to the south and west, and the whole area is most fittingly adapted for a large manufacturing and industrial centre.

With the forced ending of the coal strike in the United States by reason of action of the courts, it is to be hoped that an agreement between miners and operators will be reached which will prevent a recurrence of trouble.

#### NO RE-OPENING U. S. INQUIRY.

The plea of the American publishers for a re-opening of the newsprint inquiry, which last year has been emphatically denied by the court.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November, 10.—Newsprint grows scarcer all the time, the demand increases each week and the value of paper and pulp stocks continues to ascend on the stock markets. The situation is becoming alarming and there is little relief in sight in overtaking the call for newsprint on all sides. The big companies are making extensions and the new machine of the Spanish River Paper Mills has been set operating at Espanola with another to follow in a few months.

One of the interesting announcements of the week is that the Great Lakes Paper Company is about to erect a huge plant just east of Port Arthur with an output of over a hundred tons a day. There will be a groundwood pulp plant of one hundred tons a day and a sulphite pulp plant of twenty-five tons. The total expenditure on the enterprise will be between four and five million dollars. There is room in Canada for this undertaking and others like it.

Another evidence of the reaching out of Canadian mills for the sulphite pulp trade is the journey of Sir George Bury, head of the Whalen Pulp and Paper Mills, of Vancouver, to China and Japan to develop business and the increase of the annual production of their mills from 56,000 tons to 75,000 tons. The scarcity of groundwood pulp keeps up and there is a large number of inquiries constantly coming to hand. Prices range from forty dollars up to forty-five and forty-six per ton, according to the location of the mill, quality of the product and how urgently it is required by the purchasers. It is intimated that the figure will go still higher. Reports received from the Crown Timber Agents of Ontario are to the effect that settlers and others will take out an increased supply of pulpwood this season and there will be a ready market for all of it. Already considerably increased prices are being asked.

One of the main topics of conversation at the present time is how high will newsprint prices go in Canada and what will the mills get for the eighty-five or ninety per cent proportion of their product which they export. It is probable that the figure in the Dominion will reach four cents and for the commodity delivered over the border the quotation may be four

and a half. All manufacturers are up against higher costs and pulp, coal and other supplies, not to speak of wages, count in the computation. Conditions now resolve themselves into supply and demand and one favorable factor is that the U. S. Circuit Court has refused the application for a review of prices. The manufacturers have thus scored a victory and publishers may be glad to get supplies of raw material at any price before 1920 terminates.

All lines of paper are in steady demand and toilet and tissue mills are running farther behind in orders while coated paper plants, although operating with double shifts, are unable to catch up. Many new firms are getting out literature of an advertising character and are using coated stock. Printing establishments are decidedly busy and paper box companies have all they can attend to. Girl help is scarce and package goods (not referring to girls) are coming more and more to the front. During the period of the European conflict there were many concerns who, in order to cheapen production, did away with containers but that day is now passed, wax paper is also greatly in demand and all plants are rushed to the limit.

Jobbers report that business is so brisk that they are getting behind in shipments and deliveries to them are delayed in many instances. Wrapping papers are very firm in price and a leading kraft concern has sent out notices that, after January 1st next, all deliveries or orders taken will be on whatever prices prevail at the time of shipment. One eastern Canadian Company reported this week that they were refusing more orders for their various lines than they were accepting.

In boards of all kinds the mills are behind and will accept no orders that do not take in the full width of the machine. It is necessary for them to get the maximum output possible to keep up with the trade that is coming their way. Prices remain firm. Manufacturing stationers are rushing out papeteries, high class envelopes and allied lines for the Christmas business which is expected to be the largest on record.

Thus the whole story in the paper arena is one of expansion and production. Many mills would like to take aboard more export business but are unable

## Scandinavian American Trading Co.

50 E. 42nd STREET

8311  
TELEPHONES 8312 MURRAY HILL,  
8313

NEW YORK

Write us when  
you have any  
surplus of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

to do so owing to home consumption. Blotting papers will soon be turned out in Canada in larger quantities than ever and one mill will specialize on this line. The trend of affairs is that the paper business in Canada is going to be more highly specialized from now on and the day of running off half a dozen kinds of paper on the one machine is rapidly passing. Then several new ranges will soon make their appearance such as bristol board, vegetable parchment, etc. There will also not be much overlapping in the business and this should tend to increase production. There has been a rumor from some time that the Bathurst Lumber Company, which now produces about sixty tons daily of sulphite and sulphate pulp respectively, would turn their attention to the erection of a paper mill but general Manager Angus McLean reports that nothing has been finally decided as yet regarding this and no decision will be reached until next year. In the meantime the company is developing its water power on the Nipisiguit river at Grand Falls, twenty miles from Bathurst, putting in two units of 4,500 h.p. each and will be running all their industries by electricity a year from now.

The demand for high-grade sulphite pulp is exceptionally active at present and the prospects are very bright. In regard to sulphate pulp, the market is somewhat quieter owing to the fact that there is more or less Scandinavian kraft coming into the United States recently and is being sold at cut prices; in fact the Scandinavian pulp is being sold at a figure under the cost of production. It is understood that the mills, who are holding some of this kraft pulp in Scandinavia are being forced by their banks to realize, and as they have special freight rates coming to the American side, they can bring their pulp over for very low carrying charges. It has been stated that the freight on pulp from the Scandinavian mills to the United States is only about 25 per cent of what it costs Canadian manufacturers to ship their kraft pulp from Canada to the British market. The Canadian manufacturers feel this is rather a bad handicap, and it is seriously interfering with the market of kraft pulp from the Canadian mills to the United States.

### NEW YORK MARKETS.

New York, November, 8.—Business of consistently good volume continues to be reported in all kinds of paper and the market is in a firm position. Demand has settled down to a point where it is not characterized by as large a degree of excitement as was in evidence a short time ago, but the movement of paper into consuming channels is unchecked and mills with few if any exceptions are operating full and shipping out all of their product about as quickly as it becomes available.

The coal strike has a dampening influence on the manufacturing situation, but thus far no reports have been received of mills being compelled to close down for want of fuel. As matters stand, the majority of paper mills of the country have sufficient coal on hand to last them for several weeks, while as far as newsprint mills are involved, the probabilities are they will not experience any great difficulty in securing coal as they have been placed on the Government priority list. Should the strike be continued for any appreciable length of time naturally the paper industry, together with other manufacturing industries, will be seriously affected, but present indications

are that the backbone of the strike has been broken by the firm stand of the Government and the probabilities are the mining of coal will soon be resumed in normal fashion.

Offerings of roll newsprint for prompt delivery have about disappeared from the market. Mills in common are sold far ahead and have none of their product to dispose of in the open market, having their hands full in trying to keep contract customers supplied. Spot prices therefore are nominal, and all manner of quotations are heard of. Sales are said to have been made at beyond 6 cents a pound at the mill, and judging from the keen demand and the urgent need of publishers, this price or any other is not improbable. Daily newspaper proprietors in various sections are adopting measures seeking to relieve the stringent shortage of newsprint which is constantly growing more acute. The policy most are pursuing is to limit their editions to a fixed number of pages and copies, with the result that they are daily leaving out columns upon columns of advertising. One local newspaper has made a practice for the past several weeks in printing a statement on its first page every day giving the amount of advertising it has been obliged to omit, and almost every day something like thirty or forty columns of display advertising have been omitted.

The wrapping paper market is in a firm position, buyers operating actively and freely meeting the quotations named. Tissues are quotably steady and sought in good volume. The book paper situation exhibits little change notwithstanding the continuance of the printers' strike in New York City. Local demand remains quiet but mills report little let-up in buying activity, which would indicate that consumers outside of this city are increasing their purchases. This seems quite likely in view of the large number of periodicals which are being printed outside of New York as a result of the printing trade strike here.

Fine papers are moving in large volume at firm prices. Mills in general are reported running at maximum capacity and to be finding a ready market for all of their output. Export business is cutting quite a swath in the fine paper trade at present, shipments to foreign countries showing a gradual and steady increase. South American countries, it is understood, are purchasing large quantities of the cheaper grades of writing papers in the United States, and manufacturers are said to be diverting such supplies as they have no market for here into such channels.

Boards rule firm and are moving in a consistent manner. Buyers have let up in their operations to an extent, as they usually do at this season, but mills are kept busy delivering on back orders and it can safely be said that the average board manufacturer still has two to three weeks' business booked, which should keep them engaged until just before the turn of the year when box manufacturers ordinarily resume purchasing. News board is quoted at \$65 per ton and plain chip board at \$60.

GROUNDWOOD.—Strength characterizes prices on mechanical pulp and available supplies are at a very low ebb. Spot offerings, in fact, have practically disappeared and transient buyers are experiencing increasing difficulty in locating pulp irrespective of the prices they are willing to pay. Behind the strong groundwood market is the active demand for and voluminous production of newsprint paper, which is absorbing all the supply of pulp to be had. When it

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

is understood that the consumption of newsprint during the past several months has been running something like 25 per cent in excess of the normal production, the brisk demand for mechanical pulp can be readily explained. Bids of \$40 per ton for No. 1 spruce groundwood for prompt delivery are frequently turned down by manufacturers, most of whom are not in a condition to enter into engagements for immediate shipments, being sold up for some time. Reports are heard off and on of transactions at as high as \$50, and in view of the strong position of the market and the increasing demand, almost any price appears probable.

**CHEMICAL PULP.** Chemical woodpulp is quotably steady but lacking in fresh market feature. There is a steady movement of supplies into consuming channels but demand is not excited and producers seem to be filling the wants of buyers without undue trouble.

Newsprint sulphite is probably the most actively sought grade and sales at 3.50 to 3.75 cents a pound at pulp mills are quite numerous. Many mills are sold up on this grade of sulphite and are out of the market insofar as prompt shipments are concerned. There is also a good call for domestic bleached sulphite, offerings of which are light, most producers having disposed of their output for several months ahead and being indisposed to enter into engagements further off. Kraft is steady at a quotable basis of around \$80 per ton for No. 1 domestic pulp, and soda pulp and Mitscherlich sulphite find a ready market. Receipts from foreign sources continue light and as the time for the freezing over of the Baltic is drawing nigh supplies from Scandinavia are likely to grow smaller from now on.

**RAGS.**—Paper-making rags are moving toward mills in limited quantities and there is little or no change of note in market prices or conditions. Low grades chiefly used by roofing felt manufacturers lead the demand, and activity in this class of material seems to be sustaining values on the better qualities in the face of their slow movement. Roofing rags of No. 1 grade are selling at between \$2.70 and \$2.80 per hundred pounds f.o.b. New York and of No. 2 quality at \$2.60 to \$2.70. Felt manufacturers as a rule report having fairly large supplies on hand, but it is understood most of them have bookings far ahead for their product and are pursuing a policy of constantly adding to their stocks of raw material. In the better grades of rags, No. 1 packing of whites leads the demand, and sales of repacked stock at \$7.50 to \$8.00 are reported and of miscellaneous packing at \$6. Thirds and blues are moving only in scattered directions and at relatively low prices, sales of repacked blues being noted at \$3.75 to \$4.00 f.o.b. New York.

**PAPER STOCK.**—Business of fair magnitude is passing in waste paper. Demand runs mainly toward the low-priced descriptions used by box board mills, but there is a consistent and fairly voluminous movement of high grades into consuming channels. Prices are generally maintained and such alterations as have occurred have been invariably in an upward direction. White news is in a very strong market position, this being attributed to the scarcity and high cost of groundwood, which prompts consumers to look for this grade of old paper. Sales at \$2.10 and \$2.15 per hundred pounds f.o.b. New York have been recorded and reports have been received, though unconfirmed, of transactions at even higher levels. Another active market is over-issue newspapers, which are sought by

board manufacturers at prices ranging between \$1.15 and \$1.25 at shipping points. Folded newspapers are firm and moving regularly at around 85 cents per hundred pounds New York, while No. 1 mixed paper is being absorbed in good volume at a price basis of 75 to 80 cents. Flat stock is still more or less neglected and dealers report offerings of heavy books and magazines at \$2 New York to be resulting in few orders, mills as a rule seeking to buy at cheaper figures. Shavings are quotably steady with No. 1 hard whites held at \$5.25 to \$5.50 and No. 1 soft whites at \$4.00 to \$4.25.

**OLD ROPE AND BAGGING.** Occasional sales of No. 1 Manila rope at \$6 per hundred pounds New York are reported, but current demand from mills is weak, and most buyers are seeking to acquire supplies at cheaper levels. Old bagging is in limited call and consumers appear to be securing all the stock wanted at a price basis of about \$2.75 for No. 1 scrap.

### MILLION DOLLAR FELT PLANT NEARING COMPLETION.

There is a fine new factory now under construction in Hamilton, Ont., for Porritt & Spencer, Canada, Limited. Building operations have been in progress for some time and the announcement that the premises will likely be ready for occupancy about December 1st next, is of deep interest to both the pulp and paper and the textile industries, for the company, as a branch of the English concern of Bury, England, are to engage in the manufacture of paper makers' felts. The building is already half completed and when the machinery and plant are installed the outlay will represent in the neighborhood of a million dollars. The decision of the English firm to establish a plant of this extent in Canada was reached after a careful survey of the textile and pulp and paper felts in this country and the investment of this amount of money in what will be the largest factory of its kind in Canada, reflects the company's faith in the possibilities and further future development of the two industries in the Dominion. Already enjoying a big trade in Europe and on this side of the Atlantic, the firm is establishing the present enterprise in order to handle Canadian demands and its export business.

The factory, which has been designed by the W. J. Westaway Company, Main and McNab streets, Hamilton, is being constructed on Lothbridge Street in the east end of the city and is on the main line of the G. T. R. to Niagara Falls. In addition to commodious and well-equipped manufacturing departments, provision has been made for every modern convenience for the comfort and health of the employees, including first aid quarters, dining room and the latest system of forced hot water heating.

The buildings are constructed of brick walls, steel beams, reinforced concrete, plank roofs and steel sash. The picker room is isolated from the storage by fire-proof construction and the whole plant has been designed to use all the natural light possible. W. H. Yates, Jr., of Hamilton, is the contractor and good progress is being made with the work.

Twenty-five employees of the Eastern Mfg. Co., Bangor, Me., became American citizens the other day. They expect a larger number on the next naturalization day. How many Canadian mills are trying to make Canadian citizens of their foreign help?

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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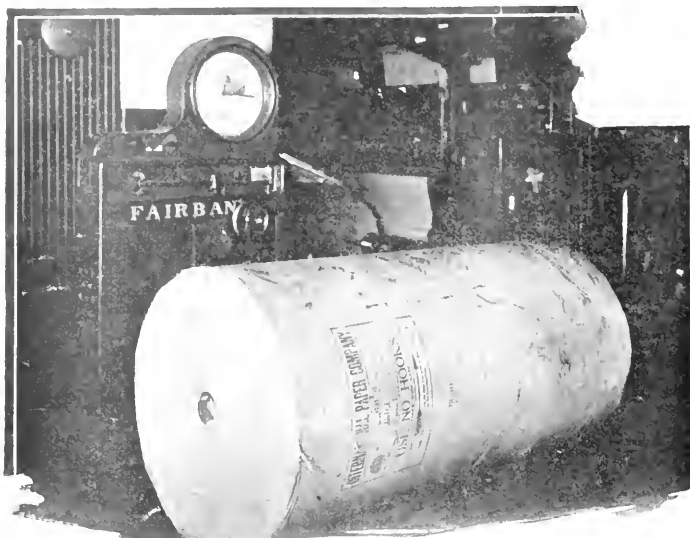
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# EDITORIAL

## MAKING USE OF THE ASSOCIATION.

The offices of the Canadian Pulp and Paper Association have been moved from the Shaughnessey Building to Rooms 701 and 702 Drummond Building. This is the second move that has been necessitated in the past three years on account of the growth of the Association and the extension of its activities. With every move, and in fact every month, the services of the Association have been developed so that members now have many advantages that were hardly thought of five years ago.

One of the reasons, other than the necessity for more commodious quarters, for moving the association offices was to get a location more convenient for the members and others who frequently or occasionally visit them. Aside from regular and special meetings of executives of the Association and of the Sections which may be held in the Association rooms, there are probably many thousands of visits to Montreal each year by people connected with the pulp and paper industry either as producers or consumers. Both of these classes are cordially welcome at the Association office, we understand from the secretary, and more calls from such people would not only be of advantage to the secretary of the Association but also to the visitors. In the first place it would serve to increase the ability of the office to act as a clearing house for information and advice. It would also serve to put the mill in touch with trade possibilities and conditions and would put consumers in touch with sources of supply and general mill conditions. The advice of the secretary as to where a person might go for a certain grade and where a mill might find a customer for a part of its output or an indication of what might develop into a profitable line to introduce is all a form of service which works both ways.

The editor recently had the pleasure of calling at the new offices and found Mr. Dawe and Mr. Beek sufficiently settled to transact all necessary business and well on the way to the arrangement of the association library, files and other machinery of the office. Large wall charts on which information relating to the various grades of pulp and paper are plotted regularly show not only the present conditions of the various lines as to shipments, stocks and production, but they also serve the general tendencies. The relations between the conditions in the various lines can also be discovered by a comparison of the various curves. The secretary is doing some interesting work and his efforts will not only be encouraged but assisted and improved by frequent visits from men who are interested in these things. It is only by a close co-operation and

an intimate understanding, such as can be possible by a frequent personal contact that the Association will be bound together and become a real force, not only for the development of this particular industry but also as a social and industrial bulwark of the Dominion.

## "COMING CONVENTIONS CAST THEIR

The title of this editorial is incomplete. It resembles the statement that "Coming events cast the shadow before", but it seems a little unfair to include the word "shadows" because that implies that an opaque body is an obstruction to rays of light. We prefer to think of the conventions of the Pulp and Paper Association and the meetings of the various sections as sources of light rather than obstructions to it. Consequently it would seem fair to say that "Coming conventions cast their radiance before". Such a prediction, however, may be a little bit premature at the present time but from the experience of a little over three years with Canadian conventions there is every assurance that such a statement is not all together unfounded.

It is approximately three months until the annual meetings take place but the success of a meeting depends on three factors, the enthusiasm of the crowd when the members get together and discuss matters of importance and mutual concern, on the good fellowship which grows with the personal contact at frequent meetings, and perhaps most of all on the careful preparations which must be made many weeks in advance of the event.

Many things have happened since the last annual meeting and we are now back on a peace basis, or shall be as soon as the Order in Council expires which fixes the price of newsprint. The country is not back on a pre-war basis and perhaps never will be. In many respects it would be decidedly better if the world should forget the conditions of the pre-war basis. Probably a majority of such conditions are no longer desirable. The experience of the past five years should have developed a desire and a purpose for better conditions than ever existed before and a determination that many practices which previously we looked on as tolerable are no longer in accord with the spirit of the world. If Canada, along with other nations, has not emerged from the conflict with the determination to make things better, then the great lesson has not been learned and the greatest good has not been derived from this monstrous evil.

With the labor organizations meeting in an international convention to establish some basis of fairness for the competition of the laboring man in one country

of the housing war in another it behoves every employer of labor in Canada to see that his workmen labor under the best available conditions. Such a matter as this does not usually appear on the program of a manufacturer's convention but we venture to say that there are few items of more importance to a mill's economic condition than the quality of housing and degree of contentment enjoyed by the employees. It is essentially an economic problem for the management to provide suitable housing at an attainable price but the effect is like the course of a boomerang in that it comes back in the health, contentedness and efficiency of the workmen. Of course, efficiency may be interpreted in the terms of decreased cost of production or in terms of a sufficient increase in wages to make possible the payment of the slightly higher rent that will be necessary for a proper type of dwelling. Looking at it either way, an investment in health and contentment is highly desirable.

Technical Section meetings are looked forward to, not only by the members of the Technical Section but also by the managements of the mills. More and more of the managers are coming to attend the Technical Section meetings and so come directly in touch with the important scientific topics that are being discussed by their chemists and engineers. The past year must have seen many developments of value in a technical sense which could be properly discussed at a technical meeting without exposing mill secrets. Some technical workers have no doubt come up against problems which present puzzling points and many of these no doubt have already been met by other members of the Association. A discussion of these, either in open meeting or in conversation with friends, would make work easier. A number of suggestions for discussion have appeared in the various paper journals recently and a discussion of them would be of immense value to the industry. A few suggestions would be, the estimation of the percentage of groundwood and sulphite pulp in newsprint and other papers; the heating value and method of application of the combustible matter in waste sulphite liquor; and the destruction of pulp by fungi and bacteria and possible remedies.

The last item has been found of such extent and importance by the investigations so far undertaken at the New York State College of Forestry and at the Forest Products Laboratories that the American Technical Association has passed a resolution asking Congress to appropriate \$50,000 for the investigation of this subject. The statement is made that the injury to pulp wood and wood pulp causes a loss of \$50,000,000 annually to the pulp and paper industry of the United States. In proportion to wealth and population the pulp and paper industry of Canada is of infinitely more importance to the Dominion than is this same industry to the United States. Consequently an equi-

valent loss of wood and wood pulp here is of enormously greater import.

The matter of determining the percentage of fibres is one that is worthy of considerable study and attention as it is an every day mill problem that many mills do not pay sufficient attention to.

Now is the time for members to begin collecting information and ideas. Suggestions for the program of the section meetings and of the Association meetings will be very welcome by the committees in charge. In fact the committees cannot be expected to hatch satisfactory ideas unless members of the Association and the Technical Section take the trouble to lay a few eggs.

---

### THE INDEX, GENTLEMEN, THE INDEX!

What a relief to say, after weary months of waiting, that the index for the Pulp and Paper Magazine for 1918, Volume XVII is really ready for distribution. Send in your requests, there are plenty of copies. Of course we think it is a good job. It ought to be for the time it took. It contains titles of articles, authors of articles, authors of abstracts, titles of abstracts indexed by subjects and classified, and an index or key to the classification by topics.

---

### COBWEBS.

Our heartiest congratulations to Mr. and Mrs. Roy L. Campbell on the birth of a son. We hope he is as happy days and as sleepy nights as our own husky offspring.

The wheels are turning again in New York. At least enough are moving in the printing trade to enable our contemporaries to resume publication. They have been through a trying time. We hope it will not be repeated.

From the result of the Victory Loan it would seem that previous loans might have succeeded without the tax free provision and so saved the Government a lot of money. The principal thing now is to spend it wisely, not politically.

We had dinner last week with a friend who was born in England but had lived thirteen years in the United States without having visited Canada before. The things that struck him with particular force seemed to be the opportunity of having jam and tea for breakfast and to see a duplicate of a London "bobby" on the street corner.

Mr. Lloyd Harris reports that Europe is getting down steadily to work and that Canada and the United States must do the same. There is still an enormous waste to make up. If other industries were as industrious as pulp and paper there would be little complaint of lack of production.

# Canadian Pulp and Paper in the British Market

The last issue of the Pulp and Paper Magazine contained the report of M. A. L. Dawe on the paper situation in England. Following is a continuation of his remarks.

## THE PULP SITUATION.

Canadian manufacturers of pulp will be interested in reading an article by Mr. G. R. Hall Cairne, former Deputy Paper Controller of Great Britain, although they may not agree with all the points raised therein. Mr. Cairne says:

"There has never been such an opportunity for Canada, in both the paper and wood pulp markets, as exists at the present moment. The Paper Industries Enquiry Committee, which was set up by the President of the Board of Trade to investigate the serious position in which British paper-makers found themselves after the armistice, on account of the cancelling of large orders of paper for war purposes, has shown a strong preference for paper manufactured within the Empire. Apart from that, the atmosphere has been prepared among British paper-makers and users for paper and pulp. Considerations of sentiment have their part in creating this atmosphere, but the business side also enters into it, inasmuch as many British makers rightly or wrongly feel that they have not been treated fairly by the Scandinavian pulp mills.

"The Scandinavian pulp people, knowing that British makers could not obtain supplies of wood pulp from Canada or America during the war on account of the shipping difficulties, exploited the situation and raised their prices to such high levels as to make the price of paper in our country a very serious question; in fact, the British paper-makers had to pay something like four or five times the pre-war price for pulp, with the consequence that their prices to consumers had to be raised, and a great deal of recrimination arose between the makers and consumers of paper. The British paper-maker, who has to import 99% of the material he uses, had no effective defence against the raising of prices. He would have gladly obtained his supplies from Canada, but the shortage of shipping blocked that road. The moment sufficient shipping can be obtained for transportation there will be a market in this country for anything between 500,000 and 800,000 tons of Canadian pulp per annum. The pre-war importation of woodpulp into England was about 1,200,000 tons per year, of which about 90% came from Scandinavia. Therefore, I say the British paper-maker is ready and anxious to take Canadian pulp."

As Canadian manufacturers are aware, the imports and general pulp business of Great Britain are closely associated with the British and Scandinavian Woodpulp Association, which consists of bona fide manufacturers of pulp as well as agents and merchants in the same commodity.

To my knowledge, this Association does not engage in any statistical work, such as that carried on the Canadian Pulp and Paper Association, its principal function being to provide a uniform contract note for the trade and to ensure uniform testing methods.

The following is the note for woodpulp adopted by this Association and also the conditions of sale:—

### "CONTRACT NOTE FOR WOODPULP"

(Adopted by the British and Scandinavian Woodpulp and Paper Associations.)

M .....  
 We have this day .....  
 Quantity and Description of Goods:— .....  
 Mode and Place of Delivery:— .....  
 Time of Delivery:— .....  
 Price:— .....  
 Terms of Payment:— (Cash before delivered if required) .....  
 Remarks:— .....  
 Subject to the conditions printed on the back hereof.  
 .....  
 .....19.....

"(1) **Conditions—Packing and Weight**—The pulp to be packed in bales of declared uniform weight, or a specification to be given stating the weight and number of each bale. The price is per ton of 2,240 lbs. 1,915 kilos gross for net.

"(2) **Definition of 'Air Dry'**—By air-dry weight is understood 90 parts of absolutely dry pulp and 10 parts water.

"(3) **Quantity**—Should the buyers question the quantity of pulp invoiced the dispute shall be forthwith determined by an agreed qualified analyst acknowledged good standing. In the event of a dispute as to the appointment of an analyst, the buyer shall submit three names from a list of analysts approved by the British and Scandinavian Pulp and Paper Associations to the seller, one of whom must be selected. The test must take place within 10 days of the claim being made.

"The analyst shall, at the consumer's mill, or at any public wharf, dock or station in the United Kingdom, forthwith sample and subsequently test the pulp, and determine the quality to be re-invoiced. Not less than half the parcel in dispute shall be available, otherwise no claim is permissible.

"The samples to be drawn from accurately weighed and intact bales, as nearly as possible in the manner agreed upon by the British and Scandinavian Pulp and Paper Associations. At least 2% of the bales to be sampled, but in no case less than six bales. The analyst may at his discretion, within three days, test a further 2% of the parcel.

"The award to be final and the costs to follow the result, but should the difference not exceed 0.5% the pulp shall not be re-invoiced and the costs shall be borne by the buyer.

"(4) **Quality**—Any dispute as to quality shall be referred to arbitration. Should the delivery of pulp be found, upon arbitration, not to be reasonably equal to the sample sold upon, it shall be left to the arbitrators or umpire to decide whether the pulp shall be rejected or taken at an adequate allowance. Fully half the parcel must be available for examination.

"(5) **Force Majeure**—The buyers or sellers may suspend deliveries under this contract pending any contingency beyond their control which prevents or hinders the manufacture of paper or the manufacture or delivery of pulp, viz.:—The act of God, war, strikes, lockouts, drought, flood, accidents, total or partial fire, obstruction of navigation by ice at port of shipment, and loss and detention at sea, or the like. The party affected shall give prompt notice to the other party of the cause and commencement of such suspension, and also of when it ceases to have effect, and deliveries shall be resumed pro rata according to the production of the sellers or the consumption of the buyers. When such suspension shall have continued for one calendar month, the delivery for that period shall be cancelled, unless otherwise agreed. For each succeeding period of one month the same course shall be taken. In the case of single cargoes or deliveries at longer intervals than one month one-twelfth of a year's deliveries shall be cancelled for each month's suspension.

"In the event of the works of either buyer or seller being totally destroyed by fire and not rebuilt, this contract to be null and void.

"(6) **Breach of Contract**—Should the buyers refuse to take delivery of pulp during the currency of this contract, excepting for reasons covered by clauses 4 and 5, the goods cannot afterwards be claimed, but may be sold by the sellers, after 14 days' notice, for the buyers' account. On the other hand, failure of the sellers to make delivery entitles the buyers, after 14 days' notice, to purchase against them. Each delivery under this contract to be treated as a separate contract, and failure to give or take any delivery shall not void the contract as to other deliveries.

"(7) **Default, Bankruptcy or Insolvency**—If the buyers make default in any payment in terms of contract, or become subject to the Bankruptcy Laws, or being a joint-stock company (whether constituted under British or Foreign Laws) become insolvent, or go into liquidation, or have a receiver appointed at the instance of the debenture holders or other creditors, the sellers may, at their option, withhold or refuse to make further deliveries.

"(8) **Time Limit**—All claims must be made in writing within 14 days after delivery of the consignment at the consumer's mill, wharf or station in the United Kingdom, and no claims posted after said period shall be recognised.

"(9) **Duties**—In the case of duties being imposed at British Ports on woodpulp, such duties shall be borne by the buyers.

"(10) **Arbitration**—All disputes under this contract shall be settled in the United Kingdom by arbitration under the Arbitration Act, 1889. Each party to appoint an arbitrator, who upon questions of quality shall be an expert in paper

to appoint their umpire before proceeding on the reference. If either party fails to appoint an arbitrator within 14 days of notice in writing, requiring him to do so, the arbitrator appointed by the other party shall act for both parties, and his award shall bind both parties as if he had been appointed by consent."

The rules for testing follow in detail, together with the names of the analysts who are authorized by the Association to test pulp. The system that is utilized by them is the Wedge System, and, if any members are interested in getting a complete article on this subject, they should refer to the "Paper Makers Monthly Journal" of the 15th May, 1919, where Messrs. Sindall & Bacon explain their method very fully. I have also some reprints of this, which may be useful to some of the members:—

**Rules for Testing—"Rules for Sampling Woodpulp for Moisture Tests"**—Approved by the British and Scandinavian Pulp and Paper Associations, and referred to in Clause 3 of the Contract Note for Woodpulp.

"1. Samples to be cut by the 'wedge' system. The wedges or triangles to be drawn from the centre to the outside, with base angles of 24 degrees or 12 degrees according to the size of the parcel.

"2. Template stamped by the Associations, to be used for regulating the size of each wedge.

"3. Two per cent. of the bales (but not less than six) to be sampled, and the Analyst to have exclusive rights to return within three days and take a further two per cent. should he deem it advisable.

"4. The selection of the bales for testing to be left entirely to the discretion of the Analyst.

"5.—Five sheets from each bale to be sampled. The first sheet of No. 1 bale to be drawn at zero (or, say the outside sheet), the second sheet at five inches downwards, the third sheet at ten inches downwards, the fourth sheet at fifteen inches downwards, and the fifth sheet at twenty inches downwards.

"6.—Samples of the second bale to be drawn at 1, 6, 11, 16 and 21 inches downwards, and so forth, different sized bales *pro rata*. The object of this is to have the outside sheets in fair proportion.

"7.—The wedge-shaped sample, as described above, to be drawn from each of the five sheets of a bale and the wedge to be cut right through the sheets or slab of pulp. The sheets are to be considered as divided into 16 or 32 wedges or triangles, and at each cutting the wedge next in rotation is to be taken.

"8.—More than half of the parcel must be in existence for testing when the Analyst arrives, otherwise no claim is permissible.

"9.—The following analysts are authorized by the Associations to test pulp:—

- |   |  |
|---|--|
| Davis Bros., Manchester.                                  | Clayton Beadle & Stevens, London.        |
| Grace, Calvert & Thompson, Manchester.                    | C. J. Waterfall, Bristol.                |
| Manchester Chamber of Commerce—Testing House, Manchester. | Redmond & Gemmell, Edinburgh.            |
| S. T. Skelton, Blackpool.                                 | Tatlock & Thompson, Glasgow.             |
| Sindall & Bacon, London.                                  | Wallace & Clark, Glasgow.                |
| Douglas Bowack, F.C.S., London.                           | J. & H. S. Pattinson, Newcastle-on-Tyne. |
| Cross & Bevan, London.                                    | Victor G. Jackson, London.               |

"10.—American analysts recognized by the Scandinavian Wood Pulp Associations:—

- |                                  |  |
|----------------------------------|--|
| Emil F. Johnson, New York.       | Wilkie & Co., Baltimore.                 |
| Stullwell & Gladding, New York.  | Emerson Laboratories, Springfield, Mass. |
| Arthur D. Little, Boston.        | Felix Paquin, Galveston, Texas.          |
| Hemlin & Morrison, Philadelphia. | L. A. Beanel, New Orleans.               |

**Markets for Pulp in Great Britain.** One of the purposes of my visit to Great Britain was to endeavour to assist the Canadian Trade Mission in securing additional freight space for the large volume of pulp which was then ready to be shipped to England, but for which it had been impossible to obtain space. Mechanical pulp, necessarily, received the first attention as being the most urgent. As a result of the courtesy extended by the Shipping Controller, I am able to report that the bulk of the mechanical pulp that was being in Canada last May is now on its way to Great

Britain. These shipments included pulp from the Chicoutimi Company and the Gulf Pulp & Paper Company of Clark City.

One of the difficulties in getting boats chartered in the early part of the year was the ever-present fear of re-direction. In other words, it might be possible to charter a boat either for a trip or on a time basis, but it was extremely difficult to induce the Shipping Controller to grant any protection from re-direction to some distant point. On this matter being explained to the British Paper Controller, it was taken up officially with the Shipping Controller and an unofficial promise secured that all boats which could be obtained for pulp traffic would receive favorable consideration by the board in regard to licenses. After that date, no boats submitted by the brokers in London on behalf of the interested firms had any difficulty in getting the necessary permits.

The subject of prices is naturally of interest. In July prices for mechanical pulp ranged around £7 a wet ton (2,240 pounds) *e.i.f.*, British ports. By August this price has risen to £8 a wet ton (2,240 pounds) although it was reported at that time that pulp was being sold from Chicoutimi on the British market at £6 10s. per wet ton (2,240 pounds). The price of £8 a ton was still current for Scandinavian makers in September and there was no sign of any weakness in the market, but rather of strength.

A great deal of discussion is heard regarding the possibilities of Finland coming into the market, and the likelihood of their doing so supported to some extent by the fact that the British pound sterling at the end of August had a purchasing power in Finland of 50s. Whether the high cost of materials and labor are sufficient to overcome this remains to be seen.

**CHEMICAL PULP.**

Nominal prices current, July 14th, 1919:—

	£	s.	d.
News Grade Sulphite .....	22	0	0
Easy Bleach .....	24	0	0
Bleached .....	23	0	0
Sulphate .....	21	0	0

Prices current, August 15th, 1919:—

	£	s.	d.
News Grade .....	22	10	0
Easy Bleach .....	26	0	0
Bleached .....	35	0	0

Easy bleaching pulp in September showed an increase to £28 and offers have been made to Canadian firms of £28.

Talks and correspondence with the leading British manufacturers indicate that there is every possibility of substantially increasing the quantity of Canadian easy bleaching sulphite pulp of good quality and not requiring more than 6-8% of bleach and it will be well to mention here that the entire market in Great Britain of bleached sulphite is said not to exceed 30,000 tons per annum. Certainly, on account of the fact that most English mills have their own bleaching plants, they prefer to purchase easy bleaching qualities.

The following is a list of some of the principal users of easy bleaching and bleached pulps:—

- ENGLAND**  
 Allen, J. & Sons, Ivybridge, Devon.  
 Bathford Paper Mills Co., Ltd., Bathford Paper Mills, Nr. Bath.  
 Bury Paper Making Co., Ltd., Gigg Mills, Bury Nr. Manchester.

- Crompton & Brothers, Ltd.  
 James R. Elton Paper Mills, Bury, Nr. Manchester.  
 Cannon & Clapperton.  
 Dickinson & Co., Ltd., John, Croxley Mills, Watford.  
 Dickinson & Co., Ltd., John, Nash Mills, Hemel Hempstead, Herts.  
 Duxbury & Sons, Ltd., Yates, Heapbridge Paper Works, Bury, Lanes.  
 East Lancashire Paper Mill Co., Ltd., Radcliff, Nr. Manchester.  
 Fisher & Co., Ltd., Kettlebrook Mill, Tamworth.  
 Fletcher & Son, Ltd., Robert, Kearsley Paper Works, Stonecough, Nr. Manchester.  
 Fourstones Paper Mill Co., Ltd., South Tyne Mill, Fourstones, Northumberland.  
 Golden Valley Paper Mills, Bitton, Nr. Bristol.  
 Grosvenor, Chater & Co., Ltd., Abbey Mills, Greenfield, Holywell, Flintshire.  
 Grove Paper Mill Co., Ltd., New Mills, Nr. Stockport.  
 Hartlepool Pulp and Paper Co., Ltd., West Hartlepool, Durham.  
 Hele Paper Co., Ltd., The, Devon Valley Mill, Hele, Nr. Cullompton, Devon.  
 Hendon Paper Works Co., Ltd., Sunderland.  
 Hook & Co., Ltd., C. Townsend, Snodland, Kent.  
 Makin & Son, Ltd., J., Disley Mills, Disley.  
 Marsden, Chas. & Sons.  
 Northfleet Paper Mills, Ltd., Northfleet Mills, Northfleet, Kent.  
 Olive Brothers, Ltd., Woolfold Mills, Bury, Lanes.  
 Peebles & Sons, Ltd., A. M., Rishton Mills, Rishton, Nr. Blakburn.  
 Peebles & Son, Ltd., A. M., Whiteash Paper Mills, Oswaldtwistle, Nr. Acerington.  
 Pirie, Wyatt & Co., Ltd., St. Cuthbert's Works, Wells, Somerset.  
 Ramsbottom Paper Mill Co., Ltd., Ramsbottom, Nr. Manchester.  
 Reed & Co., Ltd., Albert E., Horton Kirkby Mills, South Darent, Kent.  
 Reed & Co., Ltd., Albert E., Tovil Mills, Maidstone.  
 Reed & Smith, Ltd., Dart Mill, Buckfastleigh, Devon.  
 Reed & Smith, Ltd., Silverton Mills, Nr. Cullompton, Devon.  
 Richardson, Ltd., W. H. & A., Springwell Mill, Jarrow-on-Tyne.  
 Sommerville & Co., Ltd., R., Creech St. Michael, Nr. Taunton.  
 Turner Paper Mill Co., Ltd., Rawcliffe, Goole, Yorks.  
 Team Valley Paper Mills, Ltd., Gateshead-on Tyne.  
 Wiggins, Teape & Co., Ltd., Buckland and Crabble Mills, Dover.  
 Wiggins, Teape & Co., Ltd., Withnell Fold Mills, Chorley, Lanes.  
 Wilkinson, Geo. H., Wyeomb Marsh Mills, High Wyeomb, Bucks.  
 Wrigley & Son, Ltd., James, Bridge Hall Mills, Bury, Lanes.  
 and many other small mills.
- IRELAND**  
 North of Ireland Paper Mill Co., Ltd., Milltown Mills, Ballyclare, Co. Antrim.
- SCOTLAND**  
 Annandae & Son, Ltd., Polton Mills, Midlothian.  
 Brown & Co., Ltd., James, Esk Mills, Penicuik, Midlothian.  
 Brown, Stewart & Co., Ltd., Overton Mills, Greenock,  
 Brown, Stewart & Co., Ltd., Dalmarnock Mill, Bridgetown, Glasgow.  
 Bruce & Sons, Ltd., Henry, Kinleith Mills, Currie, Midlothian.  
 Caldwell & Co. (Papermakers) Ltd., Inverkeithing Paper Mills, Inverkeithing, Fifeshire.  
 Carrongrove Paper Co., Ltd., Carrongrove Paper Works, Denny, Stirlingshire.  
 Chalmers & Sons, Ltd., Thomas, Loek Mill, Linlithgow.  
 Clyde Paper Co., Ltd., Clyde Mills, Rutherglen, Nr. Glasgow.  
 Collins & Sons, Ltd., Edward, Kelvindale Paper Works, Maryhill, Nr. Glasgow.  
 Collins, Ltd., John, Stoneywood Paper Mill, Denny, Stirlingshire.  
 Cowan & Sons, Ltd., Alex., Valleyfield Mills, Penicuik, Midlothian.  
 Craig & Sons, Ltd., Robert, Caldererux Paper Mill, by Airdrie, Lanarkshire.  
 Craig & Sons, Ltd., Robert, Moffat Paper Mills, Airdrie, Lanarkshire, N.B.  
 Culter Mills Paper Co., Ltd., Culter Works, Peterculter, Aberdeen.  
 Guard Bridge Paper Co., Ltd., Guard Bridge, Fifeshire.  
 Hill, Craig & Co., Balerno Bank Mills, Balerno, Midlothian.  
 Inveresk Paper Co., Ltd., Inveresk Mills, Musselburgh, N.B.  
 Pirie & Sons, Ltd., Alex., Stoneywood Works, Bucksburn, Aberdeenshire.  
 Sommerville & Son, Ltd., William, Dalmore Mills, Milton Bridge, Midlothian.  
 Tiat & Sons, Ltd., Thomas, Inverurie Mills, Inverurie, Aberdeenshire.  
 Tod & Sons, Ltd., John, St. Leonard's Mill, Lasswade, Edinburgh.  
 Trotter & Son, Ltd., Y., Chirnside Paper Mill, Chirnside, Berwickshire.  
 Tullis, Russell & Co., Ltd., Anclmuty Mill, Markinch, Fife.  
 Tullis, Russel & Co., Ltd., Rothes Mill, Markinch, Fife.  
 Weir, Ltd., J. A., Forth Mills, Nr. Alloa.  
 Westfield Paper Co., Ltd., Westfield, Bathgate, Hendon Paper Mills.

#### A NEW LINE FOR ST. LAWRENCE WELDING.

Some time ago the editor had the pleasure of visiting the Montreal plant of the St. Lawrence Welding Company and saw a huge piece of machinery being repaired by their electric welding process. No doubt the possibility of making repairs in this manner was an instance of saving several hundred dollars. The company has now branched out on a new line and will manufacture steel tanks for air, liquid, and solutions in all shapes and sizes. They are equipped to manufacture these articles both welded and riveted. Mr. Thomas Gullely, who was formerly boiler inspector for the Delaware & Hudson Railroad and who has had six years' experience with the Welding Company, will have charge of the new department. Mr. T. W. Rodgers, who was recently with Darling Brothers, is now sales manager for the St. Lawrence Welding Company, and Mr. A. M. Barry, who has had many years' experience in welding and other mechanical work, is managing director.

Accidents are someone's fault; don't let them be yours.

### THE TESTING OF TAR ROOFING BOARD.

Board impregnated with hot tar, distilled and prepared in a special manner, is called tar roofing board. The impregnation of the raw board with tar is conducted by passing it through a hot bath of tar, the character of which differs according to the uses to which the finished board is to be put. The tarry compound may consist of residues of the distillation of lubricating oils, or of petroleum, or in the better kinds of a tar oil to which natural asphalt or tar asphalt is added.

After the board has been passed through the impregnating bath of boiling hot tar, it is dusted lightly with sand free from clay or loam. This prevents the rolls from sticking together when coiled.

The board to be impregnated should be strong and homogeneous, and should be composed, if possible, of 40 per cent of rags, but should contain neither straw, mechanical woodpulp nor loading. The higher the percentage of rags in the composition, the greater the faculty for absorbing the impregnation, and consequently the resistance to inclement weather will be greater. It will be evident that mechanical durability is also a very important factor.

Tests of tar board should cover the following points:

1. Determination of thickness without the sprinkling of sand.
2. Determination of resistance to folding.
3. Determination of the extent of impregnation.
4. Determination of the absorbent power and of the impermeability.

The thickness is measured in the usual manner by means of any kind of board micrometer, after having carefully removed by rubbing the sand from the surface.

The determination of the resistance to folding affords a very useful indication as to the quality of a tar roofing board. It is accomplished by cutting strips 2 to 2½ inches wide and 8 inches long, and bending one of these strips carefully and without exercising any traction over rods of 20, 15, 10, 5 and even 2 millimetres of diameter. The fold is examined, if necessary, by means of a magnifying glass, to note the development of cracks. One of the strips is also bent double, without using a rod, the operation being repeated a certain number of times, the fold being constantly examined.

As a rule a good tar board should not break before three or four foldings.

For the determination of the degree of impregnation, the percentage in weight of the tarry substances is determined, according to Waurinot's Manual for Testing Materials, in proportion to the weight of the board, the sand being previously removed.

For this purpose a piece weighing about 3 oz. is cleaned to remove the sand, then dried for an hour in a current of air at 30 deg. C., and divided by means of scissors. After weighing, the pieces are placed in an Erlenmeyer flask, provided with a cooler. Chloroform is poured into the flask, and the tarry substance dissolved by causing the mixture to boil and shaking it frequently. The solution is then allowed to cool, and is decanted in the flask in an oblique position for about twelve hours. The solution is then filtered by passing through a dry, weighted filter, and the contents of the filter are washed out with chloroform. The solvent is then distilled and the residue of distillate dried in a stove at 100 deg. C. to a constant weight.

The weight of this residue of distillation shows the per cent of tar of the sample.

According to the degree of impregnation, the absorbent power of the tar board varies. In order to determine this, a sample of about 16 inches on each side is weighed and allowed to remain in water, at a temperature of 15 to 20 deg. C. for twenty-four hours. It should not touch the bottom on either of its surfaces, nor weigh down so that the contact with the water becomes general.

The absorption, under these conditions, should not exceed 15 per cent. In well impregnated board, the gain in weight is only 5 to 7 per cent.

In determining the impermeability, the following experiment is employed. A piece 4 inches by 4 inches is taken in the centre, of the size of a rolling pin; a rim of asphalt of about a quarter of an inch is made; after this has solidified, there are placed on the sample three or four glass cylinders of about 4 square inches in section and 12 inches in height, which are filled with water to a height of 10 inches. The moment at which drops begin to form on the under surface is observed, which should not occur in the case of a well tarred board until after a period of five or six weeks.

—Le Papier.

### CHANGES IN STAFF OF BUNTIN REID CO.

Mr. Charles E. Allen, who for a number of years has been connected with the selling staff of the Buntin-Reid Company, wholesale paper dealers in Toronto, will shortly resign his position representing this firm in the Provinces of Ontario and Quebec and beginning the first of January will assume the position of manager of sales. With the experience Mr. Allen has had on the road and being in constant touch with customers and having derived a full knowledge of their requirements he will be in a position to deal more intelligently with each individual customer's requirements.

Since the cessation of the War the Buntin-Reid Company have considerably enlarged their business. They have just arranged for additional floor space in their building, comprising about six thousand square feet and have been adding to their large stock of flat papers a full line of the Rolland Paper Company's papers, including superfine linen record, Earnscliffe linen bond, white and colors, Empire bond, and Colonial bond; also Howard Smith Paper Mills lines of Belfast bond and Victory bond. These lines are carried both in white and colors and a large stock will make it possible for customers to get prompt service; service being a feature with this firm, and under Mr. Allen's management they expect to improve the service, making it better and even more efficient than it is at the present time.

Mr. George Downie, who for a number of years has been head salesman in the firm of Buntin-Reid, will shortly go on the road, covering the Province of Ontario in the interests of the firm. Mr. Downie is a thoroughly experienced paper man, having spent the best part of his life in the firm that he is now engaged with, and being thoroughly competent in all branches will be a worthy successor to Mr. Chas. E. Allen, who is giving up the position to assume the duties of Sales Manager for the Buntin-Reid Company.

Mr. Walter Lambert, of Montreal, who has done considerable work for the pulp and paper industry as structural engineer, is leaving in a few days for Europe to re-establish connections with Old Country shipping interests.

### NEW MILL SURE FOR PORT ARTHUR.

Large bodies move slowly. The big newsprint mill predicted for Port Arthur when J. J. Carrick obtained the Pie River timber limits, several years ago, will soon be a reality. The Port Arthur "News-Chronicle" of Nov. 7, tells the glad tidings as follows:

Definite announcement of the location of a five million dollar pulp and paper industry at Port Arthur was made today by Mr. D. M. Hogarth, M.P.P., who returned to the city last night, after a two weeks' consultation with the promoters.

The new company is to be known as the Great Lakes Paper Company, Limited, with headquarters at Port Arthur.

The men principally interested in the company are Mr. Lewis Alsted, president of the Combined Locks Paper Company, of Combined Locks, Wisconsin, one of the most influential organizations in the United States; Mr. George Seaman, president of the Seaman Paper Company of Chicago, and one of the largest plants of its kind in the world; Mr. James Whalen, a director of the Whalen Pulp and Paper Company, President of the Port Arthur Shipbuilding Company, and well known in financial and business circles, throughout Canada and the United States.

Contracts for power were signed by the company and the Hydro-Electric Commission last week and everything is in readiness to proceed with the preliminaries of construction.

The engineers in charge of the work are from the engineering firm of Hardy Ferguson, of New York, and men are expected to arrive in Port Arthur the first part of next week to make arrangement for foundation. The work is to be done this winter if the weather conditions permit. In any event a large gang of men will be employed in the spring. Work is to be rushed to completion so that the first unit may be ready for operation in December, 1920, and the pulp and paper mills ready to turn out products by June, 1921.

#### The Units of Construction.

The first unit of construction is to be a groundwood mill, capable of turning out 30,000 tons annually, a sulphite mill to produce 7,500 tons annually and a newsprint mill to turn out between 33,000 and 35,000 tons per year. The plant will be built so that it can be extended from time to time as conditions warrant.

The power to operate the plant is to be furnished by the Hydro-Electric Power Commission from the Nipigon River development. The company has signed contracts for a minimum of 12,000 horse power and a maximum of 16,000 horse power to be delivered at the plant at a cost of \$17.50 per horse power. The price of power is to be reduced as additional energy is taken by the company, and in the event of the price being reduced by outside consumers taking the power, the company is to enjoy the benefits of a reduction.

It is understood the new company will use the Pie and Black Sturgeon pulpwood limits for supply of raw material.

#### Long Negotiations.

The location of the mill at Port Arthur is the result of negotiations, dating back to the sale of the Pie and Black Sturgeon timber limits, purchased by tender by Mr. J. J. Carrick, of this city. Mr. Carrick entered into negotiations with a number of influential pulp and paper men in the United States and Canada and arrangements were made a year ago for the construction of the plant, but the uncertainty of securing a

satisfactory contract with the Hydro-Electric Commission at the time forced the promoters to look to other fields. Fort William was considered on the grounds that a suitable supply of power could be obtained from the Kaministiquia Power Company, but this summer a number of business men went to Toronto and secured from Sir Adam Beck a promise of cheaper power, which would enable the company to locate in this city. The contract for power was signed only recently, after a prolonged discussion between Mr. Alsted, on behalf of the company, and Sir Adam Beck, Chairman of the Hydro-Electric Commission.

The prices and quantities agreed upon by the company and the Commission were officially approved on Tuesday last and ratified yesterday by an Order in Council. The contract is for 16,000 horse power at \$17.50.

Since the signing of the contract, applications from other outside concerns for blocks of power, have been received at the offices of the Hydro, and it is certain other industries will follow the Great Lakes Paper Company.

The company located at Port Arthur because of the advantages here as compared with other places. The company is assured of an inexhaustible supply of pulpwood which can be transported by water, and an ample and uniform supply of electrical energy at reasonable rates. There is a good market for both skilled and unskilled labor. There is also the advantage of good freight rates on finished products into the territory between Buffalo and Kansas City. The Pulp and Paper Company is relieved of making large investments for a supply of water power and the providing of suitable living accommodation for its employees.

The site is in McIntyre township just outside the northerly limit of the city. The site, which consists of over a hundred acres, has been given by Mr. J. J. Carrick, who, it is said, was one of the prime factors in getting the mill located here.

### TRANSPORTATION TOPICS.

#### S.S. Service—Canadian Atlantic Ports to Australia and New Zealand.

The New Zealand Shipping Company will have the Steamer "Orari" on the berth at West St. John to sail about December 15th for Auckland, Wellington, Lyttelton, Timaru, Melbourne and Sydney.

All requests as to space and rates should be addressed to the New Zealand Shipping Company, Limited, 213 Board of Trade Building, Montreal.

#### Increase in Canadian Paper Rates.

Railways operating in Eastern Canada have served notice on the Canadian Manufacturers Association that (effective January 2nd, 1920) they propose to cancel existing commodity rates carried in their special paper tariffs, on less than carload shipments; and they also propose to transfer from Group "A" to Group "B" a number of paper articles, such as paper bags, egg case fillers, carpet lining, toilet paper and wrapping paper.

These changes will affect rates on paper and paper articles between practically all points in Ontario and Quebec east of Fort William, and the paper trade has been advised in detail of the proposed changes, so that they may take whatever action they consider necessary prior to the new tariffs filed by the railways.

# The Making of Logging Roads in the Winter

By W. L. Stadig, Canadian Fairbanks-Morse Co.,  
Ltd., Montreal.

With the present high cost of labor and material, and with the consequent increased cost of delivering the logs on the landing or at the mill, the attention of the operator is drawn to labor saving devices and modern methods more than ever before. Especially is this true when the maintenance of the main arteries of the logging roads is considered.

This very important factor is too often overlooked by the operator, who fails to realize that the intelligent expenditure of time and money on the maintenance of his roads means a greater amount of logs on his landing or at the mill in a shorter proportionate time, as well as increased profits.

The lumberman of to-day employs practically the same methods in his winter road maintenance that his



PICKING UP A LOAD OF LOGS AT THE YARD.

predecessor did fifty years ago. This is not through the lack of initiative on the part of the lumberman, for the lumberman of to-day is a wideawake, progressive, energetic business man, but is due rather to the fact that improvements in winter road-making machinery have not kept pace with improvements in other branches of the industry. The usual mode of building up a logging road is as follows:

The average logging road follows along the water-course of a small stream. The logs on the watershed of this stream are cut and, to use the logging term, are "snaked out" and yarded at some convenient point along the main road. This part of the work does not entail a great amount of road work, as the logs are usually "twitched" or hauled to the yards on a jumper. A jumper is a sled with wooden runners, and is usually hewn out and built by the shanty mechanic. The end of the log is supported on this sled, the bark is hewn from the lower side of the end of the log which comes in contact with the ground or snow and the logs are hauled by this method to the yards. The roads follow the line of least resistance and no great effort is made in clearing the roadway, as only sufficient underbrush is cleared to enable the horse or team to pass through.

The logs are cut and yarded in the fall or early winter before the snow is too deep. In the meantime, a crew of "swampers" are kept very busy clearing the main logging road which follows along the bank of the stream, to a point where the stream forks with

some other tributary, or to where the stream is sufficiently large to enable the logs to be floated to the mill.

The roadway is cleared ordinarily about 15 feet wide, trees are cut down low at the stump, water holes are skidded (bridged), the knolls are cleared away and all underbrush removed. The road terminates at the landing, at some point where the banks are suitable for placing the logs. The banks are cleared and the trees are felled to make a skidway, upon which the logs are rolled and left until the spring thaw, when they are floated to the mill.

After sufficient snow has fallen to make good hauling, "the road is broke." This means that teams are driven over the road for a few trips with only the light sleds; after the snow is packed to a certain extent, light loads of logs are hauled over the road with the rear part of the load dragging. This packs the snow and levels the knolls so that the roadway improves rapidly.

A long scraper is then used to level off the knolls. This consists of a framework of two 3-inch by 10-inch timbers about 18 feet long, with a horizontal scraper knife between the two. The scraper is drawn over the road, levelling the knolls and filling the hollows with snow until the road is in proper condition so that better loads are hauled with every passing day.

But the road is not completed yet, for men are at work skidding sliding places, filling holes with snow, cutting down knolls and preparing the road to carry



STARTING THE LOAD—A STRENUOUS MOMENT.

the heavy loads which will be hauled over it. The skilled lumberman lays a good deal of stress on having a good hard bottom for his road, and when it is reasonably level, he endeavors to maintain it in that condition.

By this time, hauling starts in earnest. The operator figures he has 50 or 60 days for hauling and uses a proportionate number of teams to handle his cut in that time. A crew is maintained at the yards and at the landing for loading and unloading the teams. On a packed snow road, if the road is reasonably level, the teams are hauling from 1,500 to 2,000 feet per load. The progressive operator is not satisfied for he realizes that he can increase the efficiency of his teams 100 per cent by icing his road. Places



are cleared at convenient points along the road where water is accessible, and tanking teams are kept busy sprinkling tons of water on the up grades and level parts of the road. Straw, rotten wood, or dirt is placed on the heavy down grades, and in some districts special apparatus is used to ease down the heavy loads. The tanking teams very often do their work by night when the cold night air freezes the water and makes it possible for the heavy loads to glide easily to the landing.

The operator is happy when he has a good road and the teams are loaded 100 per cent, but owing to our inclement winter climate, his contentment is short-lived. The road is no sooner in perfect shape, than a snow-storm comes, and during the storm the teams can haul only 25 or 50 per cent of their capacity loads. An operator with 20 teams has an expenditure in equipment, men and supplies of approximately \$500

a few trips over the road with it, the banks are formed so high that it is difficult to remove the snow out of the road. The road rapidly becomes high and difficulty is experienced with the heavy loads cutting out. A heavy rain means that the operation is tied up, until it freezes again with resultant delay and expense.

The accompanying photographs show a Lombard steam tractor with its loads of logs. These pictures illustrate to the reader what a good road means to the operator. The first one was taken after a ten-inch snowfall and shows the tractor with three loads of approximately ten thousand feet. The second illustrates the same tractor on the same road with a load of sixty thousand feet. This picture shows the tractor with three loads, but the full load when the picture was taken, was five sets. In other words, six times the quantity of logs were hauled by this



OFF TO THE LANDING—THE IRON HORSE AND ITS LOAD.



A POWER SNOW PLOW FOR MAKING ROADS.



PILING LOGS AT THE LANDING, READY FOR THE DRIVE WHEN THE ICE GOES OUT.



THE STADIG SNOW PLOW AT WORK

per day. The storm continues for possibly two days. As soon as it subsides, three or more teams are sent over the road with the plow, consisting of hewn timbers bolted together to form two spreading wings. The plow is weighted and dragged over the road, running the snow to a bank on both sides. The tanking teams follow behind the plow and with good luck and fine weather, in two or three days the teams are working well once more. The operator now has a good road with ample snow and is not praying for more, as a two days' storm can easily mean a loss of several hundred dollars to him.

Snow storms, however, are common occurrences in our vigorous winter climate and storm follows storm until the operator must increase his force, or leave part of his cuts in the yards. The plow which he has been using no longer works satisfactorily, for, after

tractor, when the road was in good condition, as were hauled by the machine after a ten-inch snowfall. The same proportionate difference is found when the hauling is done with teams.

The operator has long felt the necessity of a practical winter road-making machine. This need has led to the development of the rotary snow plow.

This machine is a proven success in country highways and suburban work, and promises to have a great field in the maintenance of logging roads. The accompanying photographs show the machine at rest and in operation. The horses are not required to do very heavy work, as the machine slides on runners and the front sled is high enough to clear a 24-inch bank of snow without dragging. If desired, the machine may be set to an offset on the front and rear sled, so that when cutting the bank away in widen-

ing the road, the horses travel on the part of the road already cleared. In one traverse the machine clears a space 5 1/2 feet wide. The depth of it and the slope of its surface may be regulated by moving the rotary cutters as the machine passes along. Thus, the surface of the road can be made of uniform height. An uneven tilted surface can be levelled; or a 22 inch comb or ridge, 1 inch to 4 inches in height, can be left by centre plow adjustment. In two traverses out and return a road 11 feet wide can be cut, and this width can be increased by additional traverses, the snow being thrown beyond the part already cleared.

With this machine on a logging road the road could be maintained 100 per cent efficient at all times. If during a storm the operator would operate this plow ahead of his teams, he could haul as good a load as he could before the storm began.

The snow thrown out of the road would never form a bank, and the road could be maintained with a good hard bottom at all times. The expense of tanking the road would be reduced at least 75 per cent. The water would be confined to the rut, formed by the rotary cutters, in which the sled runners travel. If a good ice bottom were once secured, it could be maintained at a small expense, for, during the storm the rotary cutters on the plow could be set at the proper depth to remove only the snow down to the ice surface. With this machine a good iced road could be maintained without the expenditure of tanking the road after every snow flurry. One team of horses and two men on the Stadig plow could maintain a logging road so that full capacity loads could be hauled regardless of stormy weather. The saving to the operator would be great, and it would seem as if every operator must see the advantages to be gained.

### A GOOD OLD FRIEND.

As a life-long reader of the Youth's Companion and an admirer of its ideals as well as its articles, the editor is glad to be of some service by inserting the following notice. Being both Yankees we get a favor in return.

#### Only \$2.50 Everywhere in North America.

Thirty-five volumes of the best reading—in weekly installments—for less than five cents a week. That is just what The Youth's Companion offer for 1920 really means. The contents of the next volume, which will include 8 serial stories, over 200 short stories, fifty or more articles by men of distinction, sketches, and special departments, would make 35 good volumes (at \$1.65 each) if published in book form. And there is now a uniform flat price of \$2.50 to all subscribers in Canada and the United States.

If you subscribe as soon as you see this notice you will receive all the extras mentioned in the following offer, including many of Capt. Theodore Roberts's Up-Over-Fold Stories.

New subscribers for 1920 will receive:

1. The Youth's Companion—52 issues in 1920.
2. All the reading in the 1919 issues.
3. The Companion Illustrated for 1920.

All this, at only \$2.50 everywhere in North America.

THE YOUTH'S COMPANION,

557, Commonwealth Ave., Boston, Mass.

New Subscriptions received at this Office

### GROUND TO DEATH IN PAPER MILL.

Quebec, Nov. 17. John Johnson, laborer, 48 years of age at P. 1000, was instantly killed Friday afternoon at the pulp mills of the News Pulp and Paper Company at St. Raymond, Port Neuf county. Johnson was caught by the machinery and thrown through an opening barely four inches high between two huge rollers. His entire body passed through this narrow opening, coming out at the outer end, barely three inches thick. The body had been spread to a length of over twelve feet when it rolled through the four inch space between the press.

### FOREST CONSERVATION URGED ON AMERICAN PAPER AND PULP ASSOCIATION.

The report of the Committee on Forest Conservation of the American Paper and Pulp Association submitted last Friday to the convention of the association held at the Waldorf-Astoria Hotel in New York City, finds the forestry problem to be one beyond the power of the individual timber-land owner to solve and states that its solution may be effected only through a full co-operation between the owner, the Government and the public.

According to this report the production of pulp-wood for the paper industry of the United States increased 159 per cent from 1899 to 1918, while the cost increased 633 per cent in the same period.

Following are the principal recommendations embodied in the report.

"A forestry survey and land classification to determine what we have in the way of present supplies, and the areas which may properly be designated as necessary for watershed protection and as affording opportunity for future timber supply.

"A great enlargement and extension to all appropriate parts of the country of the public purchase of cut over lands, for which ample precedent has been established in the East, by both Federal governments and by some of the States. National forests in the West created by the setting aside of land from the public domain now contain some 135,000,000 acres. The best interests of country would seem ultimately to require at least twice the present area of public forests.

"A much more vigorous and general extension of Federal co-operation with the States in fire prevention along the line of the Weeks Law, coupled with such additional measures in the different States as will most reduce the fire hazard and afford opportunity for natural reproduction.

"The States, through the adoption of uniformly fair reforestation laws, the establishment of forest nurseries and the preparation of forest working plans, should offer every possible encouragement to the owner who wishes to grow timber on his land.

"With a few notable exceptions, forest planting has not yet been seriously undertaken in the United States. In the Northeastern States 75 per cent of the region is potentially forest land and should be kept in condition to furnish a permanent supply of raw material and the water power for our basic industries, among which pulp and paper manufacturing takes first rank."

The committee making the above report consisted of Frank L. Moore, president of the Newton Falls Paper Company of Watertown, N. Y., chairman; R. S. Kollogg and W. E. Haskell of the News Print Service Bureau; D. A. Crocker of New York and C. H. Worcester of Chicago.

## BRITISH TRADE NEWS

(From Our London Correspondent.)

London, Nov. 7.—Somewhat belated reports have come to light about the annual meeting of the Employers Federation of Papermakers in the United Kingdom, which was held in Manchester on October 17 last. According to the reports nothing new was reported of interest to the paper industry as a whole. The president, who is Mr. C. R. Seddon, of the Leith Paper Mill, reviewed at length the economic position prevailing in England to-day, the attitude the Government had adopted and was likely to adopt, and the great achievements of the Federation. I must say I feel disappointed as I would like to have heard something about foreign competition and the efforts that are being made to speed up production, prices, and other elements appertaining to the paper industry. The pulp situation was also carefully ignored; but the question of employment was given consideration and the pronouncement made that the evolution of the paper industry into the 3-shift system from the two shifts had created a greater market for more skilled labor and that skilled labor could not be obtained. Of course in many mills today it is met by working overtime. The industry, consequently, must resort to the task of training skilled hands and in this the mill will play an important part.

### New Board Mill.

Messrs. Lever Bros. of Port Sunlight, near Liverpool, the great soap manufacturers, owing to their vast requirements have decided, in conjunction with the Thames Paper Co., Ltd., to establish a new board mill. The output will be about 1,000 tons a week and machinery will be installed as soon as possible. Anything Messrs. Lever Bros. put their hand to is generally a success and the Thames Paper Company have also a splendid record, their mill at Purfleet is a most up-to-date and flourishing concern. The new mill at Liverpool will be on the same lines as the one at Purfleet, which has also an output of about 1,000 tons a week.

### Newsprint.

Newsprint is still in good demand and prices are unchanged, though it is rumored that in Norway there is a feeling to advance quotations. However, sellers of newsprint here cannot complain of conditions. Newspapers are swallowing up all they can get and the quality of the paper on the whole is good. In other classes of papers, trade during the past week has been stimulated by elections all over the country which naturally brought into consuming channels large quantities of cardboard and cheap printings. The demand was good. Now that the labor market has righted itself again, the mills in England and Scotland are making up for the time they have lost. They are busy on home and export account and for fine papers there is a tendency to advance prices. No paper has yet arrived from Germany or Austria.

### Pulp.

The supplies of sulphite and ground wood this month from Canada should be good. October shipments were very fair—one week the supplies reached 3,946 tons of ground wood and 811 tons of unbleached chemical. The market at present is healthy and some transactions for forward business have been completed. These cover part of 1920. For spot delivery prices are unchanged. Sulphite is much sought after and large dealings are being done in ground wood. This accounts for the heavy shipments from Norway, which

in one week reached 4,146 tons, compared with 3,946 tons from Canada. Needless to say, Canada is holding her own in this market for ground wood and the Norwegians know it. Too much attention cannot be given to the subject and the market wants careful studying and careful watching.

### The Newspaper Seller.

It is said that the amount of newsprint consumed in the States per head is greater than in any other country. This may be attributable to the size of the newspapers in the States, which are considerably larger than those of the United Kingdom, but when the selling averages are worked out it will be found that the sales per head are not much behind those of the States. Morning papers here publish three and four editions and evening papers go up to seven and eight editions. These editions mean a big consumption of newsprint, and Mr. Alexander McLellan of the Association of News Agents stated the other day that a street newspaper seller at a southwestern railway station in London drew a clear profit of £1,250 a year. One can imagine what these street sellers must put through their hands to accumulate this vast sum out of two and four cent papers. I am wondering if there is a street vendor in New York or Montreal who can beat this income. London has five millions of people, but it is a great reading populace and it is nothing for a man to get through five editions of an evening paper and probably two morning papers. Of course it all tells in favor of the newsprint mill and the newspaper seller in the street.

### Newsprint in France.

The French newspapers are to cost more. A meeting of the proprietors was held this week at which the advisability for raising the prices of all papers was discussed and it was agreed to put on an extra two cents. The increase is due to the greatly increased cost of newsprint and the increased cost of production.

### Notelets.

The annual dinner of the British Paper Makers Association is fixed for the new year. It is preceded usually by the annual meeting.

The V. C. china clay worker was presented with a substantial sum of money by his comrades working in the clay pits with him.

The minimum time rate of wages for male workers in the paper bag trade in England has been fixed at 1s. 13<sup>d</sup> per hour and 8<sup>d</sup> per hour for women. These rates will take effect from 25th November.

There is a brisk demand for China clay from America and the difficulty in getting it away from Cornwall lies with the shipping companies. Fowey is congested.

The demand for all kinds of chemicals used in paper-making is good and prices unchanged.

Night schools for teaching papermaking are now open for the winter months.

### PLEASE CHANGE IT.

In Mr. Sutermeister's excellent article on the Manufacture of Soda Pulp there was unfortunately included a small error. On page 263 of the Pulp and Paper Magazine for March 13, 1919, and on page 24 of this reprint of the article, the figure for alkali consumed per cord of gum and poplar should be 1022 instead of 680 lbs. Copies of the reprint (80 pages), including the correction may be had for 75 cents each.

## Condition of Paper Supplies in 1919.

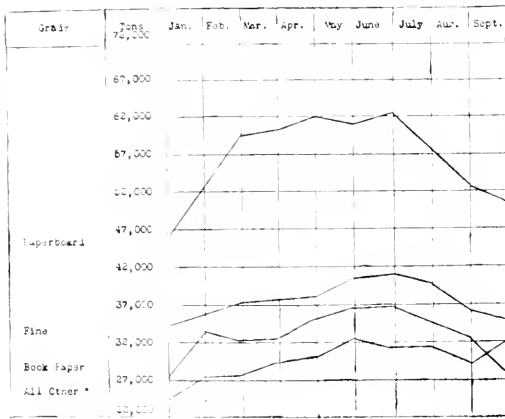
The following review includes a summary of the production, shipments and stocks of paper by grades for the first nine months of 1919, together with charts showing the trend of stocks, by months, in paper mills of the United States.

Production, shipments and stocks of paper by grades for the first nine months of 1919.

Grade.	Production		Shipments		Stocks
	Jan. 1, 1919.	Jan. to Sept. 30, 1919.	Jan. to Sept. 30, 1919.	Jan. to Sept. 30, 1919.	Sept. 30, 1919.
Newsprint - tot.	19,401	1,009,917	1,010,994	18,331	18,331
Standard News.	15,656	910,752	912,065	14,343	14,343
Bookpaper	28,431	652,519	652,675	28,275	28,275
Paperboard	46,196	1,389,924	1,385,018	51,102	51,102
Wrapping	40,199	501,415	497,702	44,212	44,212
Bag	3,408	122,683	122,075	4,016	4,016
Fine	34,576	245,472	244,701	35,347	35,347
Tissue	5,100	110,134	108,842	6,692	6,692
Hanging	2,933	66,453	63,832	5,554	5,554
Felts & Building.	7,699	194,730	194,438	7,991	7,991
Other Grades	11,310	141,430	135,052	17,688	17,688

Totals 199,860 4,434,677 4,415,329 219,208

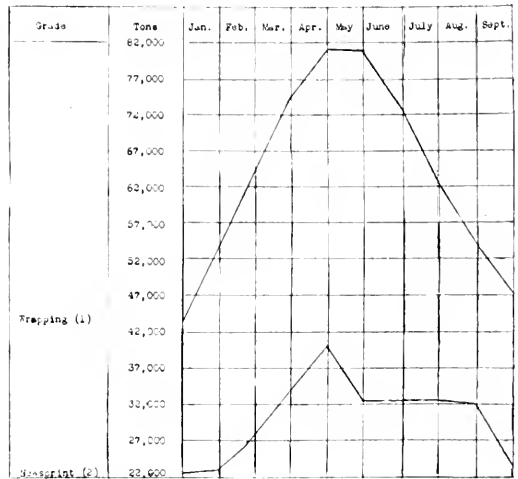
### 1. Trend of Stocks of Paperboard, Fine Paper, Bookpaper and all Other Grades for the first nine months, 1919.



### NEW YORK PAPER STOCK PRICES.

**PAPER STOCK**—Most kinds of old paper are moving in consistent fashion and at steady prices. Demand for high grades has continued to improve this week and, partly as a result of this and partly because of the limited production owing to the recent printers' strike, quotations have been advanced a few points. Soft white shavings of No. 1 quality have sold at \$4.37½ per hundred pounds f.o.b. New York and \$4.25 is now the lowest figure named on this description of stock. Flat magazines also have strengthened in value, sales at \$2.10 to \$2.15 New York having been recorded, whereas a few days ago offerings by packers at \$2 were numerous. Hard white shavings are firm at a notable range of \$5.25 to \$5.50 and No. 1 kraft paper around \$3.25. Low grades hold steady under a good movement toward box board mills with folded

### 2. Trend of Stocks of Wrapping Paper and Newsprint Paper for the first nine months of 1919.



(1) Includes "Bag."

(2) Includes "Hanging."

The figures on production indicate that newsprint production will be approximately the same as the production of 1917, which represents an increase of about 6 per cent over 1918. The figures for all grades except newsprint and hanging, indicate that the production for 1919 will be somewhat less than for 1918. Total figures of all grades for the industry indicate a decreased production for 1919 of about three per cent over 1918.

The trend of stocks shows an abnormal increase for most of the grades for the first four months of the period. This was largely due to lack of orders. Stocks of practically all grades have declined since the month of May. The most pronounced decreases occurred in newsprint, wrapping and paperboard. These grades represent about 70 per cent of the total production of all grades manufactured and approximately 60 per cent of the total stocks.—Federal Trade Commission.

\* Includes "Felts and Building," "Tissue" and "Specialties" not otherwise classified.

news selling at 85 to 90 cents per hundred pounds and No. 1 mixed paper at 75 to 80 cents.

**BAGGING AND ROPE**—Current demand for old bagging is rather quiet, yet packers as a rule are indisposed to do business at the prices bid by mills and the market is possessed of a steady tone. Consumers offer in the neighborhood of \$2.75 per hundred pounds at shipping points for No. 1 scrap but sellers contend they cannot profitably produce bagging to sell at this price and are demanding higher figures. Old rope is sought in scattered directions at \$6 or slightly less per hundred pounds. Dealers are booking orders for small tonnages at the present basis of quotations but seem cautious about entering into engagements involving large amounts, presumably anticipating a rise in the market.

## How a Pair of Overalls Paid a Paper Maker

It is seldom one reads such an intimate and interesting account of why a man has succeeded as in the following abstract from the Literary Digest of Mr. Frisbie's experience with the paper mill at Cornell, Wis. It is likely that many of our best mills are run by men who likewise have the confidence of their men, a clear vision, a keen imagination, and a big heart.

Early in life C. O. Frisbie discovered that it pays sometimes to do the unusual thing. Often in later years he has put into practice the information gained by that discovery, and nearly always with profit to himself and his associates. Mr. Frisbie is now the president of a wood products company, of which concern he took charge some five years ago when its fortunes were at a decidedly low ebb. Although at that time he knew exactly nothing about the making of paper, he has been able to pull the company of the "slough of despond," and in a recent number of System (New York) he tells the interesting story of how this was accomplished, largely through a common-sense application of the principle that it pays occasionally to disregard precedent and to do what commonly "isn't done." Before beginning the account of his experience with the wood products company, Mr. Frisbie relates the incident which taught him the value of "doing what the other fellow doesn't do." He was a boy of fourteen at the time, and had just started to work for Armour and Company of Chicago as office messenger. In this place he heard, among other things, that P. D. Armour was in the habit of spending holidays at his offices. While, as he confesses, this practice did not appeal strongly to young Frisbie, he decided that if the boss could stand it he could too, and so when the Fourth of July came around that year, the boy spent all day at the office as usual. The only other man there that day was Mr. Armour, but he did not notice Frisbie until late in the afternoon, when he inquired of the boy what he was doing there. Upon being informed by the latter that he was working, the great man responded, "All right," adding, "Get yourself a new suit of clothes, son, and send the bill to me." The incident made a deep impression on the young man and in all his subsequent career in business he has borne in mind "the power which comes from a proper disregard of the deadly rut." The circumstances of his becoming connected with the wood products company Mr. Frisbie then relates as follows:

"More than 30 years after P. D. Armour showed me that it pays to do what the other fellow isn't doing, the real worth of lack of precedent was brought home to me by Charles G. Dawes, president of the Central Trust Company of Illinois and now a brigadier general with the American Expeditionary Forces. It happened in this way. I was connected with the Chicago Tunnel Company at the time and through that interest had become well acquainted with Mr. Dawes. One day he sent for me.

"There's a paper mill and power plant up at a little Wisconsin town called Cornell," he began. "Some friends of mine have money in it. I'd like mighty well to have you run up there, look it over, and tell me what you think of it."

"Off I went to Cornell to examine a paper mill for Mr. Dawes. The oddity of it made me look forward. I didn't know the first thing about paper mills, here

I was going to diagnose the ailment of a sick paper mill. The confidence with which I looked forward to that little jaunt was greater, perhaps, than might have been warranted if I had not been trained by P. D. Armour to welcome the unusual.

"A few days later I returned to Chicago and made my report to Mr. Dawes. He thought for a moment. Then, 'Frisbie,' he said, 'how would you like to go up there and take charge?'

"I nearly collapsed. The trip I had supposed to be merely a personal favor to Mr. Dawes.

"Why, I don't know the first thing about making paper," I exclaimed.

"No," he replied, 'you have that in your favor. You're not handicapped by precedent. I don't know just what's the matter up there, but I'm convinced that a different line of attack is needed. I'd like to have you take hold.'"

So Frisbie and his family moved to the little town in the Wisconsin woods and took up their abode there, a proceeding which in itself was unusual for a man who had spent most of his life in a big city. The president of a concern is usually pictured as a man who wears a white collar and nicely creased trousers every day, but after he had been on his new job a day or two Mr. Frisbie concluded that this was a precedent he might very appropriately smash, wherefore he purchased and donned a pair of good overalls—blue ones, of course. We read further:

"I put in my time those first few weeks studying men and machines, both—thanks to my overalls—at first hand. You can learn a lot from your men if only you make it easy for them to teach you.

"For example, one night I came to a small room they called their 'barker' room. In here revolved large drums with knives around the edges. They took the bark off the logs. This apparatus had been designed to operate 10 hours a day, but couldn't keep up to schedule even by working 24.

"Pete," I said to the big red-headed foreman of this department, "you know something about these machines and I don't. Now, just why won't they keep up the pace?"

"Pete stopped chewing and looked at me in amazement. When he realized that the president of the company was willing to put faith in his judgment, he opened up like a machine gun:

"Well, it's this way, Mr. Frisbie. See those knives there? See 'em jam at every cut? Makes the motor hot and forces us to shut down about half the time. There you are. That's the reason. Now if you could put some discs on the drums and locate 'em right so the knives would clear I've always figured it would do the trick."

"By midnight that night, under Pete's guidance, the first trial disc was in place. The adjacent knife didn't jam any more. With all the drums equipped the barkers kept ahead of the mill on a regular 10-hour schedule.

"A week later I met Pete in the yard and slipped a greenback or two into his hand.

"What's this for?" he wanted to know.

"Your scheme about the barker," I said.

"Pete looked at the money inquiringly.

"Mr. Frisbie," he drawled, "I've made that suggestion a hundred times around here; but I'm only a barker man."

"I had to show him it was straight business with us before he would take the money. From that time on

practical hints flowed in from every direction.

"Without the least hesitation I'd fire a superintendent at any time who wouldn't listen to his men's suggestions. It's pays to get out from behind your desk and get behind your men. Suppose I hadn't bought any overalls nor chummed up with the barker foreman.

"In short, it was the men themselves, through suggestions like this, who got the mill running better than it had been."

Mr. Frisbie presently had things running smoothly, so far as the operation of the plant was concerned. But there was still something wrong, and it proved to be another precedent. The mill had been built primarily for the purpose of making paper, and paper it must make, in the opinion of the stockholders, even under conditions that rendered it impossible to operate at a profit. This opinion was not shared by the president. He concluded to take up the manufacturing of some product that would yield an adequate return. Finally somebody suggested wall board—

"I sent men around the country to investigate. Their reports came back dead against it. But after fair luck with my blue overalls I thought maybe I could put on some mental overalls, buy a mileage book and find out more by myself. With Mr. Dawes' remark in mind, I wondered if it weren't barely possible that my investigators had been hampered by precedent. So I traveled to see for myself, and—we decided on wall board.

"But it would take some money for any kind of a start, however modest. There were new machines to purchase and a new building, I was told, would be required in which to house them. Our directors—they had long been fed up on costly experiments—turned me down flatly.

"But I didn't feel that I ought to let that stop me. So I didn't. Once convinced that wall board could save the day, I went right ahead against the directors' decision and bought the machines anyhow. Then we set them up immediately and began manufacturing wall board in the basement of the main mill building.

"During that embryonic period my position was defined accurately by Mr. Irving Osborne, our largest stockholder. He met me on the street one day and assured me that, whatever way the property went, I would get all the credit, or all the blame. I may add, as a corollary, that some months later at a business luncheon in Chicago, Mr. Dawes referred to the company's progress in a somewhat complimentary manner; to this I felt it safe—because of time elapsed—to reply with a confession:

"Mr. Dawes," I said, "so far we've been making wall board against instructions. I'm still waiting for your directors to allow us to start."

Mr. Frisbie's next problem was to sell the product of the mill. In this matter also he pursued an unusual course. He went out on the road with the company's salesman. He says many of their customers wondered why he did not stay at home where a president rightfully belongs, but he wanted to get acquainted with the men on the road and also with the customers. So he continued his travels until he felt that this purpose had been accomplished. At length the business had been firmly re-established on a sound basis, and was in a flourishing condition. Its president now found time to turn his attention to other matters. There were two factions in Cornell, one favoring the town and the other the mill. The mill had the upper hand, the members of the town board being mill men

While it was not the usual thing to do, the president suggested to his men that the town board ought to be made up of the men of the town rather than of the mill men, with the result that all the mill men members were taken off the board. Later the town was permitted to pipe its water supply from the premises of the mill without charge. So more friendly relations were established between mill and town, and on account of his efforts to bring this about Mr. Frisbie was elected town president. Later he interested himself in the church affairs of the town and was made Sunday School superintendent, of which experience he gives the following account, ending up with a brief exposition of his philosophy:

"You often hear it said that business and religion don't hook up together. My opinion is that any successful business won't pull well without it. But I'm speaking of religion in a broad sense as distinct from the dogmatic attitude of: 'this creed's good, that one's bad.'

"One of the first moves we made at Cornell to get two pastors there, a Catholic and a Protestant. I have always thought that religion of some creed or other is needed—that it is almost essential—in making any group of workers content with life.

"One day I walked into the little hall of one of the churches. 'Who's your Sunday School superintendent?' I inquired of the pastor.

"He admitted there was no one for the job but himself.

"If you want me to," I said, "I'll be your superintendent myself. What do you say?"

"You never saw a more surprised minister. From that time on, as long as I lived in Cornell, I was superintendent of the Sunday School. And I got results that benefitted me as well as the church's Sunday School.

"What I'm driving at is this: Practical religion is largely a question of loosening up with yourself and not being afraid of tackling the job that needs a bit of your own personality.

"If you're by nature too lazy to make an announcement or teach a class or step out from the crowd in any way, you are likely to feel that religion is impractical—that it is all right for those who like it, but only for them.

"Well so is business—unless you are willing to do some things that the other fellow don't or won't.

"Religion is about what you make it, anyway. So is business. And in making either religion or business worth while you can't get far by drifting along too much with the majority.

"I never advocate attempting the unusual just because it is out of the ordinary. There's nothing in that but disappointment. Some bedrock criterion is needed with which to measure the value of every project.

"My own experience in business leads me to believe that one test can always safely be used to tell beforehand whether a radical stand is warranted. If the test is negative, better stick with the crowd; but if it is positive, don't be afraid to break with precedent."

The high finish on brown wood board is obtained not only by the mechanical treatment of the finished product. The addition of paraffin, talc, and graphite in the beater, and the employment of well cooked cellulose and hot-ground wood-pulp readily enables the desired high finish to be obtained. When the board is finished by means of agate, soap-powder gives only a unstable glaze.



## Technical Section



**B-3. "Tree wireless"—A new application.** Douglas R. P. Coats, Can. For. J., Sept., 1919, p. 348. The use of trees as wireless aerials.—C.L.

**B-3. The holocaust in Minnesota.** E. G. Cheyney, Am. For., Nov., 1918, p. 643. Describes the great forest fires which occurred in Minnesota during October, 1918. See also pp. 648 and 655 of the same issue.—C.L.

**B-3. Prevention of fire losses.** Smith Riley, Amer. For., Aug., 1919, p. 1260. Discusses forest protection with particular reference to conditions in the Colorado district.—C.L.

**B-3. Forest destruction prevented by control of surface fires.** Joseph A. Kitts, Amer. For., Aug., 1919, p. 1264.—C.L.

**B-3. Insects in their relation to forestry.** Dr. R. W. Shufeldt, Amer. For., July, 1919, p. 1221.—C.L.

**B-3. Biplanes to be used for forest fire patrol work in Quebec.** Elwood Wilson, Amer. For., July, 1919, p. 1238.—C.L.

**B-4. Wood used in the co-operae industry.** Hu Maxwell, Amer. For., July, 1919, p. 1208. Contains valuable statistics and information relative to the suitability of various species of wood for use in the co-operae industry.—C.L.

**B-4. War's destruction of British forests.** P. S. Ridsdale, Amer. For., May, 1919, p. 1027.—C.L.

**B-4. The uses of wood—Wooden beats and their manufacture.** Hu Maxwell, Amer. For., April, 1919, p. 973.—C.L.

**B-4. A maritime pine operation in France.** Capt. John D. Cuthrie, A.E.F., Amer. For., Nov., 1919, p. 657.—C.L.

**B-4. The uses of wood; wood used in the manufacture of handles.** Hu Maxwell, Amer. For., Nov., 1919, p. 679.—C.L.

**B-4. Walnut in the war.** Amer. For., Oct., 1918, p. 579. Discusses particularly the campaign to secure, in the United States, adequate supplies of walnut for the manufacture of gun stocks and propeller blades.—C.L.

**B-4. The uses of wood; the employment of wood as house finish.** Hu Maxwell, Amer. For., Oct., 1918, p. 593.—C.L.

**B-4. The uses of wood; wood in the manufacture of boxes and crates.** Hu Maxwell, Amer. For., Sept., 1918, p. 533.—C.L.

**B-4. The uses of wood—wood used in vehicle manufacture.** Hu Maxwell, Amer. For., Feb., 1919, p. 845.—C.L.

**B-4. The uses of wood; wooden artificial limbs.** Hu Maxwell, Amer. For., Jan., 1919, p. 807.—C.L.

**B-4. Effect of the war on forests of France.** Col. H. S. Graves, Chief Forester, U.S. Forest Service, Amer. For., Dec., 1918, p. 709.

**B-4. The uses of wood; wooden furniture and the place it fills.** Hu Maxwell, Amer. For., Dec., 1918, p. 731.—C.L.

**B-4. The uses of wood. Fencing materials from forests.** Hu Maxwell, Amer. For., March, 1919, p. 923.—C.L.

**B-5. Why wood is best.** Alfred Gaskill, State Forester, of New Jersey, Amer. For., April, 1919, p. 991. Discusses the many uses for which wood is pre-eminently adapted.—C.L.

**B-5. Forest research. In the war and after.** Earle H. Clapp, U.S. Forest Service, Amer. For., March, 1919, p. 947. Discusses the work of the U.S. Forest Products laboratories at Madison, Wis., in connection with the war uses of different species of wood. This laboratory performed services of the very greatest value in connection with the prosecution of the war.—C.L.

**B-7. Photographing forests from the air.** Lt. Lewis, R.A.F. Discusses the feasibility of forest mapping by photography from airplanes. Amer. For., July, 1919, p. 1206.

**B-9. Tests prove forest's effect on streams.** Can. For. J., Sept., 1919, p. 364. The Swiss Federal Station of Forest Research has demonstrated the direct connection between forests and the control of floods, also in the prevention of drought.—C.L.

**B-9. Forests and floods in China.** Prof. H. H. Chapman, Amer. For., Feb., 1919, p. 835.—C.L.

**B-9.—How Forestry and tree culture concern the disabled soldier.** W. M. Hussie, Red Cross Institute, Amer. For., Dec., 1918, p. 725.—C.L.

**B-9. Control of private cutting.** Prof. W. D. Clark, Amer. For., Jan., 1919, p. 818.—C.L.

**B-9. Forestry—The relation of wood to the development of civilization.** Wm. Carson, Amer. For., Aug., 1919, p. 1297.—C.L.

**D 4. Manufacture of fibrous pulp suitable for paper-making from sawdust and wood waste.** Eng. Patent N. 117,086, J. C. Van Wessum, Bloemendaal, Holland. J. Soc. Chem. Ind., 38, 496A. (1919). Sawdust, or other wood waste previously reduced to the fineness of sawdust, is moistened with a regulated quantity of water not exceeding 60 per cent of the dry weight of the wood and fed by a screw conveyor into a grinding mill in which it is ground to a fibrous pulp which is not in a pasty condition. The heat generated in the grinding mill should be such as to raise to a temperature not exceeding 90 deg. C. and to evaporate the moisture to such an extent that a fibrous pulp is manufactured containing not more than 30 per cent of moisture.—A.P.-C

**N-4. Methods of economizing fuels.** (La question due charbon.) Le Papier, 22, (Aug., 1919). The following methods of economizing fuels should be given much more attention than they usually get. Increase in the development of water-power; washing coal to remove some of the impurities, thereby increasing its efficiency; use of low grade fuels, such as lignite and peat; keeping a close watch on the consumption of coal in mills and factories and using all modern improvements in methods of firing, etc.; centralizing the generation of mechanical power wherever possible; use of powdered coal. The advantages of the latter are: practically perfect combustion (98 per cent); utilization of very low grade coals (as high as 45 per cent ash or as low as 5 per cent volatile); the CO<sub>2</sub> content of the flue-gases is always above 16 per cent; the CO content is always below 0.5 per cent; the evaporation never falls below 9 lbs.; absence of C in the ashes; automatic removal of the ashes; automatic control of the heating, reducing labor to a minimum, 1 man being able to attend to a battery of 10 800 h.p. boilers.—A. P.-C



# UNITED STATES NOTES

## Paper Makers and Publishers Agree.

An interesting feature of the special meeting of the American Newspaper Publishers Association held last week at the Waldorf-Astoria Hotel in New York City to consider the newsprint shortage, was a conference between a committee of the publishers and a committee representing the manufacturers—the American Paper and Pulp Association, which met in annual session at the same hotel. And for what was said to be the first time, representatives of the newsprint industry were invited to address the publishers on the question of prime mutual interest. Sentiment among the publishers was unanimous for reductions in the size of newspapers as a means of conserving newsprint. Among recommendations made in a set of resolutions adopted by the Publishers Association was a suggestion that all daily and Sunday newspapers be asked to conform to the regulations laid down by the War Industries Board last year, although that board is no longer functioning. Increased advertising and subscription rates, substitution of adjustable monthly or quarterly advertising rates for yearly contracts, restriction of advertising space and no hoarding of print paper, are among other means urged in the resolutions to meet the threatened newsprint famine. The white paper and legislative committees of the association are directed to urge the enactment of such legislation as will permit the development of waterpower so that timber lands in the United States may be made fully available for the manufacture of wood pulp, lumber and paper, and to urge the taking of steps by Congress that will induce the Canadian Government to repeal the Order in Council prohibiting the export of wood cut from Crown lands. R. S. Kellogg, secretary and sales agent for the Newsprint Service Bureau; Thomas Walker of the U. D. Craig Company, and Chester W. Lyman of the International Paper Company were appointed from among the manufacturers' representatives by Franklin P. Glass, president of the association, to the committee charged with the sifting of suggestions and the drawing up of resolutions. The publishers were told by Mr. Kellogg that the mills are unable to increase production as they are running at full capacity.

A paper testing machine which is expected to render valuable service to the paper industry by supplying data regarding the strength of paper—data difficult to obtain heretofore—has been invented by a member of the staff of the Forest Products Laboratory at Madison, Wis. The difficulty in testing the tearing strength of paper has always been in securing a constant force of value. Irregularities in the paper structure, due to its fibrous nature, make the reading of the force required to tear the paper very uncertain. The machine now nearing completion overcomes this difficulty by yielding an average force for the entire tear. It simply measures the work done in tearing the strip. Dividing the work done by the length of the tear gives the average tearing force. The length of the tear is the same in all cases, so that the machines can be calibrated to read the average tearing force.

The first annual meeting of the Cost Association of the Paper Trade Industry was called to order last Wednesday in the Waldorf-Astoria Hotel, New York City, with President D. E. Burehell of Bangor, Maine, in the chair. This organization is a branch of the American Paper and Pulp Association which met two days later at the same place. Mr. Burehell spoke of the meeting as one called to show progress rather than achievement. At a gathering held a year ago only three concerns reported that they had adequate cost accounting systems in operation. To-day, said Mr. Burehell, every concern in the paper trade in the country is convinced of the necessity of cost accounting, which it is hoped, the members of the association will help them to obtain.

Speaking to the members of the Southern Logging Association at the annual convention of that organization held last week at New Orleans, La., J. F. Kidd of Lake, Miss., declared that hundreds of tons of sawmill waste which could be used for newsprint and other coarse papers, are being burned every day. He asserted that there are millions of feet of stumps and small timber in southern cutover lands which could be used to furnish raw material for newsprint. "I understand," said Mr. Kidd, "that many small town weekly and semi-weekly newspapers have been forced to suspend publication because of the high cost of newsprint, and that even some of the city dailies are having a rocky road to travel, but it seems to me that there is inefficiency and neglect of opportunity somewhere when raw material is being wasted in quantities with a market crying for the products which could be manufactured from this wastage." He advocated the establishment through the Southern timber belt of either pulp or paper mills to convert into paper what "now goes up in smoke."

Under a bill recently introduced in Congress by Representative Christopherson of South Dakota, exportation of newsprint paper would be put under a ban. Penalty for violations of the proposed law would be a \$10,000 fine or ten years' imprisonment.

One of the most important features of the special meeting of the American Paper and Pulp Association which was held last Friday in the Waldorf-Astoria Roof Garden, New York City, was the report of the committee on forest conservation. This report is in effect an exhaustive survey of the natural resources of the country in relation to its supply of wood suitable for the making of paper pulp. The recommendations made by the committee involve not only a national forest policy but also have direct bearing on the needs, policies, and conservation plans of several States. The report shows that the available estimates disclose an indicated original forest area in the United States of \$50,000,000 acres. The present area, based on the same estimates, is but 550,000,000 acres. Two million acres of this are practically merchantable timber, 250,000,000 acres have been partly cut and burned over, with a fair natural reproduction, and 100,000,000 so badly cut and burned that extensive planting will be needed to restore this acreage to anything like a productive element in national life.



# PULP AND PAPER NEWS

D. F. Coots, representing the Whiting Paper Co., Holyoke, Mass., was in Toronto this week calling upon the trade and reports that all the mills in the New England district are rushed with orders.

J. F. Ellis, President of Barber-Ellis, Limited, Toronto, and wife are spending a few weeks on a holiday trip to Boston, New York and other cities.

Isaac Wilcox, who looks after sales in Canada for the Smith Paper Co., Lee, Mass., manufacturers of tissue paper, was in Toronto recently on business.

The various paper manufacturers and wholesale paper firms in Toronto donated a page advertising space one day last week in the Toronto papers in the interest of the Victory Loan, the announcement being "An Exchange of Money That Pays."

W. H. Sherriff, of the Hodge-Sherriff Paper Co., Toronto, has returned from an extended and successful business trip to Winnipeg, Calgary and Edmonton and reports the paper business as being active in the western provinces.

George O. Comfort, of Carthage, N. Y., who is well and favorably known in Canadian pulp and paper circles, was in Toronto during the past week on his way to Camden East, Ont., where he will be in charge of the paper mill in that town which has been taken over by the newly incorporated Specialty Paper Mills, Limited. Mr. Comfort is one of the directors of the new company.

H. C. Courtney, of Beauharnois, Que., superintendent of the Howard Smith Paper Mills, spent a few days in Toronto last week calling upon old friends in the trade.

An addition is being erected to the envelope factory of Barber-Ellis, Limited, at Brantford. The extension which faces Marlborough street, is 100 x 100 feet, two stories high and is being built of steel and reinforced concrete with brick facing. The main factory is about 300 x 100 feet. It is expected that the work will be completed early in the new year and much additional room will be provided so that the company will not only be in a position to increase its output but also to render better service. The envelope factory of the firm has been rushed with business for many weeks.

It is understood that the sales offices of the Howard Smith Paper Mills, and the Toronto Paper Mfg. Co., the former now located at 120 Bay street, Toronto, and the other in the Mail building on the same street, will be amalgamated after the first of the year and that the new quarters will be in the Royal Bank building, corner of King and Yonge streets, Toronto.

The Nashua Gunned and Coated Paper Co., of Nashua, N. H., who are establishing a branch factory in Peterborough, Ont., expect that the alterations to the building which they will occupy, will be completed in a few weeks and that manufacturing will start in January next. The building at Peterborough has seventy thousand feet of floor space and the company will make non curling gummed papers, cloth lined papers, box stay, sealing tape, gummed cloth and plain and printed wax papers of all grades. The

Canadian business will be managed by Robert A. Brown, who has been identified with the Nashua factories for some time in an executive capacity.

United Lumber, Limited, with head office at Fredericton, N. B., and a capital stock of \$24,500 has been incorporated to carry on a general lumber and pulp-wood business.

Sir Harry Brittain, M.P., who is paying a visit to Canada at the request of the British press, spent a few days in Montreal and Toronto and addressed the Canadian Club in Toronto on the Imperial Press Conference which will be held next summer in the Dominion. Sir Harry was the originator of the first Imperial Press Conference, held in Britain in 1909 from which great benefits resulted throughout the whole Empire. All the journalists who will be present at the second Imperial Press Conference next year will be the guests of the Dominion Government.

Many friends in the paper trade were shocked last week to learn of the sudden death of William P. Ryrie, who passed away at his apartments 755 Yonge street, Toronto. He had been attending a reception in the Masonic Temple in honor of the recent election as an active member of the 33rd degree Supreme Council of the Masonic Lodge in Canada and had just returned to his abode when he expired. Mr. Ryrie had been for some time in poor health and had intended going to Florida to spend the winter. He was sixty-two years of age and had held many high offices in the Masonic circle. He was unmarried and leaves one brother, James Ryrie, of Ryrie Bros., jewellers, of Toronto. The deceased had spent all his life in the pulp and paper business and for many years was managing director of Becker and Co. of America and exported thousands of tons each year of sulphite pulp to the Old Country. When the war broke out and export could no longer be carried on, he organized the Ryrie Paper Co. He was also President of Hyslop Bros., Toronto, and a director of the National Club. Few men in America were better posted on the pulp business than Mr. Ryrie, who was highly esteemed and respected.

A charter has been granted to Khaki Call, Limited, Toronto, with a capital stock of \$100,000 to engage in the printing and publishing business.

A federal charter has been granted to Porrits and Spencer (Canada), Limited, with a capital stock of one million dollars and headquarters in Hamilton. As announced in the last issue of the "Pulp and Paper Magazine," the company, which will engage in the manufacture of paper makers' felts will begin operations next month, their extensive buildings being nearly completed.

Photographic Arts, Limited, has been incorporated with a capital stock of \$100,000, and headquarters in Montreal, to acquire as a going concern the business carried on in Ottawa by Fred. M. Switzer and the National Engraving Co., Limited, as engravers, lithographers and photographers. The new company is also empowered to conduct business, not only in these

lines but also as publishers, embossers, bookbinders, paper makers, envelope and paper bag makers, etc.

A federal charter has been granted to the Rose Lithographic Corporation of Canada with a capital of \$50,000 and headquarters in Montreal. The company is authorized to acquire, operate and maintain plants for the manufacture of groundwood, pulp, sulphite, paper, cardboard, paper materials, etc., and to carry on the business of stationers, lithographers, publishers, wall and ceiling paper manufacturers, etc.

The Canadian Pad and Paper Company, Limited, is a new conserve with a capital stock of \$10,000 and headquarters in Toronto, to conduct the business of stationery manufacturers, lithographers, engravers, printers and dealers in paper and paper products, etc. The incorporators are: Roy C. Hill, Stanford G. Wilson, George Hill, all of Toronto, and John Cooper, Schomberg, Ontario.

The Diamond State Fibre Co. of Canada have been granted letters patent to carry on the business of manufacturers of and dealers in goods, wares and merchandise, of every description, and to act as commission agents, brokers, etc. The headquarters of the company are at Bridgeport, Penn., and the provisional directors are: Jas. S. Lovell, Wm. Bain, E. H. Stewart and others, of Toronto, where a Canadian branch will be established.

The Brown Corporation recently entertained a large party of bankers in a trip to the big sulphate mill at La Tuque and to the Gouin Dam at La Loutre. They were greatly impressed. A personal inspection of the possibilities for industrial development, based on Canada's wood and waterpower will convince any sensible financier that investment in the pulp and paper industry is safe and sound.

The newest member of the Technical Section is Mr. I. J. Gartland, Union Bag & Paper Corp., 1770 Woolworth Bldg., New York City.

#### FOR A BETTER SPIRIT IN B.C. CAMPS.

In the "Canada Lumberman and Woodworker" for September 1, Mr. Nubann Henderson, Superintendent of the Shantymen's Christian Association, gives a few suggestions regarding the work which that organization is doing among the logging camps of British Columbia.

The results of the friendship of Association workers for the men of the camp and of the work which Catholic priests and Protestant missionaries have done among them are apparent. Mr. Henderson writes, both in the lessening of reckless living and in the spirit which is revealing itself in these lives of merest and discontent.

Mr. Henderson pays tribute to the fundamental religious teaching which has helped to keep the lumberman, as a class, sane and secure from being swept into the whirlpools of Bolshevism. On the other hand, Mr. Henderson arraigns on the basis of "poor business" the selfish short sightedness of those industrial employers who keep their men working seven days in the week and in other ways show that they regard them as tools, not as human beings. They will presently reap what they have sowed—a harvest of discontent, embitterment, Bolshevism. The arraignment may well go far, for the man who prepares the way for Bolshevism to enter into the mind and heart of a fellow being is a traitor to his country and to the principles for which his countrymen have sacrificed their lives.

All the missionaries in the world would find it difficult to reach men who feel that they are not having a square deal. All changes toward better living conditions, such as Dr. Henderson describes in his graphic picture of a comfortable Western logging camp, will tend to keep men contented, knowing that they are living as self respecting men have a right to live. Contentment makes more possible a receptive attitude readiness for a deepening of the spiritual life. And—in an ever-widening circle—true religious faith, like the winds that sweep through their great forests, will clear from their minds and hearts the poison of rancour and bitter discontent and leave the nation safer, saner, more protected by these gallant woodsmen sons of hers.

#### INTERNATIONAL PROCESS CO. ON PEACE BASIS.

Because of the War Activities of its entire personnel, the International Process Company of 5 Beekman Street, New York City, has been practically unable to conduct business during that period; in fact its technical staff has only recently completed an elaborate report to the Chief of Ordinance, U.S.A. on "Investigation and Experiments to determine the possibilities of Wood Fibres as a substitute for Cotton in the manufacture of Smokeless Powder."

The war work of the laboratories and miniature pulp mill at Stamford, Connecticut, necessitated many additions and improvements in equipment so that it is now in excellent condition to investigate and test raw materials for paper making or for nitrating and to report on the possibilities of vegetable fibre for any purpose, as well as by-product recovery in connection therewith.

The International Process Co. was incorporated in 1908 to investigate and exploit processes and apparatus for pulp manufacture, and to develop commercial plants based on such processes and apparatus as were found practical, and efficient. Its Consulting Chemical Engineers, Mr. Carl P. Carlson, of Langbron, Sweden, was the pioneer inventor and designer of apparatus for the manufacture of Kraft papers, and M. A. W. Wearn, the Mechanical Engineer of this Company, was with Mr. Carlson as engineer in the design of much of the equipment that made the Carlson Mills so successful in Sweden, Norway and Finland, where sulphate processes were first developed.

At a recent meeting of the Company, Mr. Joseph G. Mayo, President of the Ironside Board Corporation to Norwich, Conn. was elected a director and Vice President of the Company. Mr. Mayo was General Manager of the Southern Paper Company's plant during 1915-1916 and afterwards General Manager of the mills of the Mattagami Pulp and Paper Co. at Smooth Rock Falls, Ontario.

The International Process Company is now in a position to serve the pulp and paper trade as Chemists and Engineers, supply machinery, and take responsibility for its installation and operation.

Research work to determine the use of by-products of wood is one of the important functions of the company; in discussing the plans of the company Mr. Sawtelle said that it was now owned exclusively by American capital, and that all its machinery would be built by American manufacturers.

A piece of lime kept in a tool chest will prevent the tools from rusting.—Millwrighting



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November 17, 1919.—Everything in connection with the paper line goes on with a swing and orders are getting farther behind. Collections are good, business comes without the asking and the only question which arises is how to get out the necessary quantities. Every mill in the Dominion is speeded up to capacity and prices are very firm. Newsprint grows more scarce every day and the circulation of all Canadian dailies is now at top notch mark. Each week brings further news of the immediate development of the trade and extensions to plants. Last week the news was flashed over the wires of the big undertaking of the Great Lakes Paper Co. at Port Arthur, and this week comes the tidings that Price Bros. and Co. will erect a new newsprint mill in the Saguenay district with a capacity of five hundred tons. Saguenay will be the name of the new town and it will be located about four miles east of Chicoutimi where the largest groundwood plant in Canada is very busy on mechanical pulp. Thus one more town will be brought into existence through pulp and paper activities and, within the last decade, there has been probably a dozen different centres, which have sprung into being. Before the end of 1920 it is expected there will be produced daily in the Dominion over three thousand tons of newsprint.

The manufacture of mechanical and sulphite pulp is also being increased in like proportion and Canada is now striking a stride in the industry which will steadily increase. The added tonnage would all find a market even if it could by magic turn be turned out over night. The American market and the demands abroad would then not be satisfied. Groundwood pulp is commanding almost any price and the question is not a matter of quotations but where can the mills, who desire to purchase, have their requirements filled. The advance in prices is bound to have a corresponding effect on the cost of paper and mills are now figuring on readjustments which are likely to go into effect at the beginning of the year. The general opinion prevails that values will ascend on every line of paper before there will be a fall and no one looks to any commodity ever getting back to the figures that prevailed before the war.

There has been a stiffening on certain lines of writing paper, bonds and ledgers and all mills making wrappings and kraft are sold up for months ahead. One firm, which has been making poster paper, has gone out of that line in order to devote more attention to their other ranges and the price of tag manila has been advanced half a cent. It is expected that new quotations will soon come out on sulphite pulp and prices for the finished product will be rearranged accordingly.

Jobbers are complaining about not being able to get deliveries and the box making plants are being rushed to capacity. They cannot secure female help to turn out the goods and some of the industries in Canada have stopped taking orders. New plants are being started and still the cry for more goods keeps up. One of the largest customers is the candy industry which, due to heavy shipments of confectionery to England, are calling for more boxes than ever before. Wax paper plants are rushed to the utmost and the fact that several American concerns are establishing branch factories in Canada, shows how great is the development in this country. Inquiries come constantly to hand for export and only a limited amount of this business can be taken on. Some paper mills are giving customers a pro rata allowance in paper in an effort to preserve an even balance and to deal with all firms impartially and no speculative buying is being engaged in. Printers are all working to the limit and more printed matter is going out through the mails than ever before. Cost counts but little in preparation of the jobs and the question arises when can you deliver the goods and in what quantities? The war has brought about many changes in the publishing field particularly in the military arena and farmers' papers which call for much paper. It is now rumored that the Farmers' Sun in Toronto, which has been a weekly, will soon come out as a bi-weekly. This move may be the preliminary to another daily paper and a publication in the interest of the Farmers is about to be launched in St. John, N. B. Other week-end publications have increased, labor journals are enjoying a wider circulation than ever and, with the change in the trend of political affairs, new openings in the publishing line are presenting themselves.

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any surplus to  
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Every coated paper plant in Canada has recently extended its output and still cannot keep up with orders. The same condition applies to toilet and tissue production and the mills are from three to four months in arrears. Broad wrapping is coming to the front again and sulphite papers have a large call. Possibly no better evidence of expansion is indicated than that a million dollar plant has been established in Hamilton for the manufacture of paper makers' felts and that Paper making machines are now being turned out in Canada for the first time and the first one, which will be wholly of Canadian make, design and build, will be in operation early in the new year in an eastern mill.

The postal authorities of Toronto have sent out notices that there are approximately ten thousand letters mailed daily in the city in foolscap-size envelopes, the contents of which are confined to one sheet of letter size paper which could with economy be enclosed in a No. 7 or No. 8 envelope. A call has been made upon business firms, in the interest of more expeditious handling of the mails, to use smaller envelopes, which run less risk of being damaged or torn. It is also urged that mail matter be posted earlier in the day to facilitate despatch, and equalize the work of the office.

#### NEW YORK MARKETS.

New York, November 15.—The increasing shortage and rapidly mounting cost of newsprint has finally caused newspaper publishers in the United States to take definite and concerted action toward relieving the market situation which for some weeks has been steadily becoming more serious. At a meeting at the Waldorf-Astoria Hotel in this city last Wednesday, called by the president of the American Newspaper Publishers' Association for the express purpose of considering the paper situation, more than 100 prominent publishers of daily newspapers from all parts of the country passed resolutions favoring a return to war-time limitations on the use of newsprint, and pointing out that only through a procedure of this sort could the present available supply of paper be made sufficient to go around. Present at the conference were several well known representatives of paper manufacturers, including R. S. Kellogg, sec. of the Newsprint Service Bureau; Chester W. Lyman, of the International Paper Company, and Thomas Waller, of H. G. Craig & Company, paper merchants and distributors. Each of these men, in brief addresses, advised the newspaper proprietors that the paper mills of the country and Canada could not hope to fill the demand for newsprint at the prevailing rate of consumption. Mr. Kellogg cited statistics showing that the consumption of newsprint has for some time past been fully 10 per cent in excess of the production, which accounts for the serious shortage of newsprint. The resolutions adopted by the meeting urge that all publishers of daily newspapers limit the size of their editions and to adhere strictly to their limitations, which, if generally followed, will effect a reduction of approximately 33 per cent in the volume of paper consumed.

The market for newsprint continues uninterrupted in its climb upward. Demand has reached an acute stage and little fresh supply is being offered in the open market, only occasional lots of small tonnage being available for prompt shipment. Actual sales have been recorded within the past few days at 7 cents per pound F.O.B. mills, and there is no question that considerable quantities could easily be sold at this and

even higher figures. Manufacturers as a rule are sold ahead, not for a month, but for five and six months, while some have disposed of their output for a year to come, and are consequently out of the market as regards additional sales.

The fine paper market appears to be steadily growing stronger. Export business is gradually increasing and domestic buyers are enlarging their operations as well, so that mills are getting all the orders they can comfortably accommodate. Prices are firm and the tendency is upward. Low grades of bonds and ledgers are moving in relatively larger volume than high-priced papers, and producers in frequent cases are jacking up prices.

Wrappings are firm and moving in a consistent manner. Mills are well provided with business covering several months ahead and are cautious in accepting further orders. Quotations are firmly maintained but generally unchanged at about 9 cents for No. 1 kraft and 11½ cents for No. 1 jute. Tissues are in good demand and quotably steady. No. 1 white tissue is quoted at \$1.10 to \$1.20 and No. 2 white at around \$1, while manila tissue of No. 1 quality is selling at \$1 to \$1.10.

Book papers retain their strong undertone, and while most manufacturers and dealers continue to name the same prices, reports have been heard of some advancing quotations on forward shipments, which would indicate that mills are declining to accept more business at the present basis of prices. The strike of printers in New York fails to have other than a sentimental influence on the market, and it seems safe to say that consumption—in the aggregate—has suffered but little, if any, whereas any loss that has been sustained is likely to be made up when printing establishments locally resume operations on a normal scale.

The board market appears to have taken on a firmer aspect notwithstanding that ordinarily at this time of the year demand eases off, boxmakers for the most part holding aloof as buyers until after the holidays. Prices are firm and mills are operating at maximum capacity. News board is selling at \$65 per ton and plain chip board at \$60.

GROUND WOOD—Quotations on mechanical pulp are strictly nominal. Practically no spot lots are available, grinders as a unit being sold ahead for a long time and having no prompt shipments to offer. Reports are heard of sales in the open market at beyond \$50 per ton, and in view of the circumstances surrounding the situation, it seems more than probable that consumers have paid such record-breaking figures for pulp. Those producers having occasional parcels of ground wood to dispose of to transient buyers are pursuing a policy of insisting that buyers take equal amounts of stored pulp along with freshly ground pulp and in this way are removing all their stocks which have been held in store. Ground wood which has lain in the open for a year and longer is said to be selling at \$40 and more, reflecting the acute need of consumers for supplies.

CHEMICAL PULP—All grades of sulphite pulp are moving steadily and at firm prices. Paper mills are freely absorbing such lots as are offered and are meeting the prices asked without hesitation. Sulphate pulps, on the other hand, are comparatively quiet, although there is sufficient business activity to sustain values, and no change is reported in quotations. Arrivals of foreign pulp have been rather large during the past fortnight. Four or five steamers have dis-

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charged cargo at New York, but the bulk of this supply has been sold to arrive and the influence on the market has been negligible. No news has yet been received to the effect that the Baltic has been closed but it is presumed by local tradesmen that navigation over this waterway is about over for the season. Newsprint sulphite of domestic origin is selling readily at \$70 to \$75 a ton at pulp mills and the majority of transactions are at the higher level. Sales of foreign kraft pulp at \$82 a ton ex dock have been recorded, while domestic kraft of No. 1 quality is available at \$80 and doubtless at slightly lower figures. Easy bleaching sulphite is actively sought and is offered sparsely. Very little of this kind of pulp is coming in from Scandinavia and domestic manufacturers are sold well ahead.

**RAGS**—Some grades of papermaking rags are improving in demand and the market is characterized by more activity than has been evident in recent weeks. No. 1 packing of white rags is moving freely toward mills and sales of repacked whites at \$7.75 and \$8 per hundred pounds New York and of No. 1 miscellaneous packing at \$7 to \$7.25 have been noted. Choice grades of twos and blues also are in a livelier market position, while roofing rags maintain their strong undertone under a brisk inquiry from felt manufacturers. No. 1 roofing rags are selling at close to \$60 a ton f.o.b. shipping points, sales at this basis being definitely reported in the middle West, while Eastern mills are paying between \$2.80 and \$2.90, or \$56 to \$68 a ton. Rags from abroad continue to arrive in large quantities but according to talk heard in the trade considerable dissatisfaction is expressed by consumers over the quality of the material coming in from Europe, and indications are that a good many buyers are switching their purchases from imported to domestic rags. Dealers in and around New York feel confident that the domestic market has a more active period ahead of it than has prevailed thus far this year. They base their contentions on the large volume of material being consumed by paper mills and on the poor quality of the rags coming here from European countries. There is consequently a lack of selling pressure and prices in general display a steadiness reflecting the bullish attitude of packers.

Note: For waste papers, rope and bagging. See p. 100

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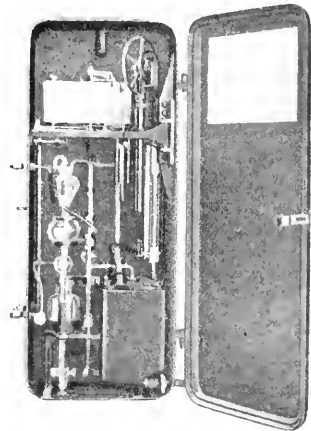
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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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J. NEWELL STEPHENSON, M.S., Editor.

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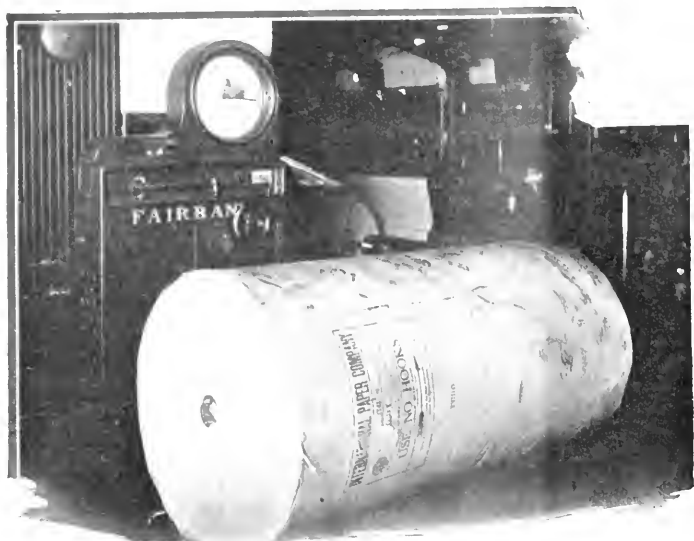
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MONTREAL,  
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VICTORIA.





# EDITORIAL

## *DON'T RENEGE.*

Never since wood pulp has been used for the manufacture of newsprint has the fibre of the forest attained such an importance to the daily life of every person who reads the newspaper. The consumer, that is the publisher of the newspaper, particularly in the United States is faced with a very serious problem and the smaller the publisher the more difficult is his position. The large dailies in the big cities are consuming an amount of newsprint which is simply astounding and due to their large revenues from the advertising which is being thrust upon them they are in a position to bid very high for spot lots of paper in addition to their contract supplies. This condition was not so serious when contracted amounts were sufficient but when the consumption of paper passed this point and began to eat so rapidly into surplus that spot lots have been almost entirely bought up, these publishers are now ready to pay practically any price so long as they can get the paper. We have now approached, if not arrived at, the point where no large newspaper can get the amount it wants without robbing somebody to get it. There is no need of quoting figures as a bare statement of conditions is sufficient to show the gravity of the situation from the publisher's point of view. It simply means that if the papermakers supply large dailies who are able to pay what would be impossible prices to the small publisher, many of the latter will have to quit.

The matter as it applies to the manufacturer is more than one of simply making paper and shipping it. It is a matter of maintaining a reputation for doing the right thing that will long outlive the present temporary and more or less artificial demand for newsprint. It is a big temptation for a mill to disregard the need of the man who has bought on a comparatively low figure in order to supply the demand of a possible purchaser who is able to pay a very much higher price. It may appear sharp for a business man to accomplish deals of this kind, but it is certainly far from practicing fair play. The paper maker is under a moral obligation to supply a legitimate customer and especially one who has been led to believe that his normal requirements will be filled. Many small papers and a number of large ones as well have not made agreements for assured future supplies, partly through their own reluctance and partly because of the attitude of some mills and of the uncertainty of government regulations. It is not right that they should be victims of misfortune if it is possible to keep them supplied with a reasonable amount of newsprint.

In spite of the very profitable market in the United States at the present time and in spite of the present sacrifice of very attractive profits by catering to this extra demand, instead of cultivating the more permanent market which has been opened up in Great Britain, it would certainly appear to a spectator on the side lines as if the game would ultimately be won by the more careful and conservative tactics of playing for the permanent market. There is in sight an increased production of about 70,000 tons for next year on this continent and it is quite likely that this would naturally be absorbed by the normal increase in the newspaper publication. If the industry wants to take advantage of the present abnormal condition it would seem to us that a better way would be to absorb only so much of it as can be supplied by the switching to newsprint of machines making paper for which the demand is less. Beyond that we would say, "Let the newspapers take care of themselves." It is a poor farmer who buys more seed potatoes than he has land to plant.

## *FIDDLING ON THE SAME STRING.*

We are not bringing up the coal question again at this time for lack of something else to talk about but because the coal situation in Canada is not at all satisfactory. Were it not for the delightfully cordial relations that exist between this country and the United States the North American continent would be in an exceedingly serious position in regard to the supply of coal for the coming winter. Things are bad enough as they are, but with both countries making every effort to assist each other in the present trying circumstances the prospects are not altogether without hope. When it is necessary to reinstate the fuel controllers of war time and to re-establish restriction ad regulations and to make such arrangements for the coaling of ships as has recently been done it is certainly the duty of every user of coal to economize to the utmost.

Outside of improvements and repairs on the equipment for generating, distributing and utilizing heat it is possible for the management of every pulp and paper mill to make a special appeal to the man behind the shovel so that the coal will be used under the boilers to the best possible advantage. At this point it may be said that appealing to the fireman or the steam engineer will not suffice if the appeal is not supplemented with instruction and helpful suggestions. Many a fireman believes he is doing his very best when he keeps his eye on the steam gauge and his hands on

the shovel. What he should do at the same time is to have his mind on the fact that he is shoveling money into the furnace and that it is up to him to find out and use the best method of making the best use of the coal. This education in heat conservation must go to nearly every man in the plant, at least to those who are allowed to touch a steam valve. Heat costs more than money this year.

May it not be that our waste of coal is typical of other wastes and that serious effort to avoid waste in one respect may assist us in developing a better practice in other matters with distinct benefit to the industry and its prospects. There is no question but that we must save coal. It is not altogether a matter of money, it is a matter of being able to get it. When a mill in West Virginia that has a coal mine almost at its back-door, has to shut down for lack of fuel it is easily seen what a predicament a mill one thousand miles from a coal mine is likely to find itself in when coal supplies are cut off at the source. There has been an enormous decrease in the production of coal and the most careful consumption of available supplies will be a serious strain on the amounts available. The coal miners' strike has been called off, but that has not put the miners back at work, and their return will not ensure an adequate production.

#### THE ADVERTISING PAGES.

There are three classes of readers of every trade journal, those who turn first to the editorials and other reading matter, those whose interest lies first in the advertisements, and those who have the time and inclination to read both the reading matter and the advertisements. It is surprising how much a person connected with the pulp and paper industry can obtain by looking carefully through the advertisements of the magazines relating to his work. There is very little in the way of equipment, processes or engineering service connected with the industry that cannot be obtained from the firms there represented. Besides an index of equipment the reader has here an extensive source of information to which he is always welcome. Such information regarding pulp and paper making processes and apparatus is important not only to the purchasing agent, but even more so to the superintendent, foreman and workman in the mill.

Besides the advertising of supplies and service for the manufacturing departments, the Pulp & Paper Magazine presents each week the business cards, as it were, of manufacturers of and dealers in pulp and paper. These are intended to serve as an introduction of the dealers to the manufacturers who may have material to dispose of and to introduce the manufacturers of paper also to the many readers both in and outside of the industry who must occasionally purchase supplies of these products. Thus we serve a double purpose in the dissemination of this type of information.

In addition to presenting such opportunities the Pulp & Paper Magazine is always glad to give special attention to requests for particular information. It is not possible for an advertiser to tell all about his wares in the limited space of an advertisement so that it is frequently our pleasure as well as privilege to put inquirers in touch with sources of supply for various types of material. Of course, all of the firms who manufacture and deal in pulp and paper mill equipment are not represented on the advertising pages of this magazine, but we are sure that there is little that cannot be obtained from those who do and we also feel sure that the material or service furnished by them will give satisfaction. So we would say to our readers, don't neglect an occasional survey, if not a regular perusal, of the advertising pages of your trade journal.

#### COBWEBS.

In an editorial in a recent number of the Fourth Estate it is stated that publishers should increase their advertising rates so as to decrease the volume of advertising by 50 per cent and to effect a needed saving in newsprint paper. A significant sentence reads:—"Probably the real reason why the publishers have not done this before is, as one of them recently remarked, that they can't trust each other to keep an agreement; but The Fourth Estate dislikes to believe that any such feeling will in this crucial period prevent the owners of daily newspapers from readjusting their businesses on safe and sane lines, just the same as those upon which other businesses are conducted."

This is a very important statement in view of the certain howl that would be created if manufacturers were to even consider the possibility of an agreement to raise their prices. Perhaps publishers are exempt from laws that affect ordinary people.

There has been appearing in one of the British Paper Journals an advertisement for a chemist for a Canadian mill. A number of Canadian mills already have British chemists trained in English or Scotch universities who are giving excellent service. It is a sad commentary, however, on our own methods of instruction as well as on the lack of co-ordinate effort between the universities and the industry that it seems necessary to go so far away for a chemist. We happen to know of an English chemist who wants to come to Canada and we congratulate him for wanting to come but we really would like to see more Canadian trained chemists and engineers as well as more Canadian trained pulp and paper makers in our industry. It has been asserted that the young Canadian paper maker does not have the same sense of responsibility or the same degree of attachment to a position that seems ingrown with men from the other side. This may be a natural trait or a national trait with the Old Countrymen but in either case it is certainly one that might well be imitated here.

# Destruction of Wood Pulp by Fungi

By Otto Kress<sup>1</sup>, C. J. Humphrey<sup>2</sup>, C. Audrey Richards<sup>3</sup>

The Forests Products Laboratory has, in the past, received numerous requests from pulp mills for information relative to the prevention of the decay of pulp wood and wood pulp, by the various molds and fungi and possibly bacteria, which cause this deterioration. In view of the limited appropriation available for this work and the numerous other urgent problems requiring the attention of the section of pathology, it was found impossible to study this problem intensively. Recently, however, some of the pulp mills have again requested the Laboratory to study this problem, and in view of the increasing cost of pulp wood and wood pulp, an instigation of this problem, of which this paper is a preliminary report, is under way.

The Laboratory was furnished, by a cooperating paper mill, with a shipment of approximately 1000 lbs. each of infected and freshly ground groundwood. The pulp had partially dried during shipment, the clean pulp being 42.8 per cent bone dry, while the infected pulp, as received at the Laboratory, averaged 41.8 per cent bone dry.

Our cooperator described this shipment as follows:

"One lot of pulp is freshly ground pulp from approximately 70 per cent spruce and 30 per cent balsam, ground at close to 70 H.P. with a 10-cut, screw thread burr at 160 deg. temperature. The other pulp is of similar wood and similar grinding, except that it was stored for six months in a dark, high basement where it quickly became infected, as the laps show."

The pulps as received were studied both as to their paper making qualities and as to the organism causing the deterioration and their possible control.

## Physical Characteristics of the Clean and Infected Groundwood:

Figures 1 and 2 made under the same magnification showing the typical appearance of the infected and clean groundwood, clearly indicate the effect of the

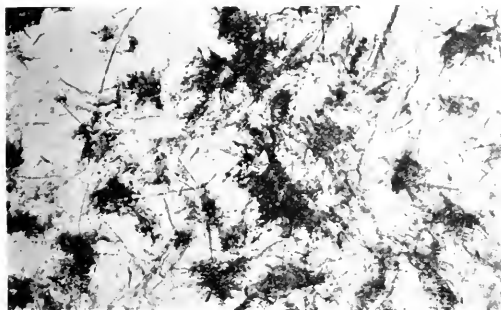


Fig. 1.

Clean Groundwood Pulp  $\times 25$ .

infection on the wood pulp fibre. The fibre length of the infected pulp averaged 0.25 m.m., while the clean ground pulp gave an average of 1.09 m.m. As can be seen from Fig. 2, the fibres of the infected pulp have been destroyed to a considerable extent, the resulting pulp being brash and brittle, in some of the

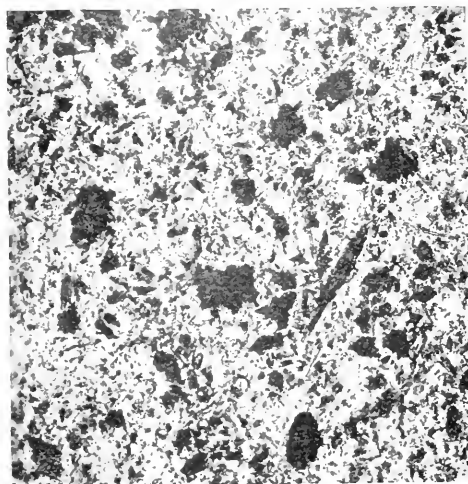


Fig. 2.

Infected Groundwood Pulp  $\times 125$ .

infected areas the pulp crumbles to a dust when a sample is rubbed between the fingers.

## Chemical Characteristics.

Samples of both the infected and clean groundwood pulps are being studied to determine their more important chemical constants. It is hoped that the information to be obtained from a study of the chemical composition of the two pulps can be correlated with their physical and paper making characteristics.

To date only the cellulose determination has been made, showing a yield of 50.7 per cent for the infected pulp and 57.8 for the clean groundwood pulp. The results of this investigation and the interpretation of the data obtained will be presented as a paper at a future date.

## Freeness Test.

Separate portions of the infected and clean groundwood pulps were shredded in a Williams shredder and then opened up in a small beater under as near identical beater conditions as possible. The resulting pulp was put through a small hand screen, pressed under a wine press, sampled for moisture and tested for freeness by means of a Skark Sedimentation Tester. The results of the tests are given in Table I, while Figs. 3 shows the curve which indicates the far greater freeness of the infected pulp over the fresh pulp.

In this connection the difference in feel of the same percentage of suspension of both clean and infected groundwood pulp is of interest, the infected pulp, due to its shorter fibre and high percentage of fibre fragments, giving apparently a suspension of less density than is obtained with the clean pulp.

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**Shark Sedimentation Test on Infected and Clean Groundwood Pulps.**

Time Seconds	Infected Groundwood Discharge, C.C.	Clean Groundwood Discharge, C.C.
15	160	90
30	230	125
30	230	125
45	270	155
60	305	175
75	330	195
90	355	215
105	380	230
120	400	245
135	420	260
150	425	275
165	435	290
180	440	295
195		310
210		320
225		330
240		340
255		355
270		360
285		368
300		372

**Behavior Towards Dyestuffs.**

Comparative dyeings were made using acid, basic and direct cotton colors on both clean and infected pulp to note any possible differences between the two stocks. The infected pulp was considerably darker and duller so making the hand sheets, made from the dyed infected pulp, very much duller than the sheets prepared from the clean pulp. The depth of color produced on both stocks with the three classes of dyestuffs used was practically identical.

**Paper Making Characteristics of the Two Pulps.**

Under as nearly identical beater and paper machine conditions as possible, runs were made of infected and clean groundwood pulp into waterleaf paper.

**Table II—Strength Test on Waterleaf Paper Made From Infected and Clean Groundwood.\***

	Wgt. per ream Lbs.	Bursting strength per lb. per ream Lbs.	Bursting strength per 100 lb. thickness Lbs.	Breaking length, average of across and in machine direction Meters	Stretch, average across and in machine direction Per cent	Robbs, average across and in machine direction No.
Run I Infected Groundwood	73	16	12	1030	2.5	0
Run II Clean Groundwood	72	42	31	1920	3.8	2
Run III Infected Groundwood	79	17	12	1220	2.3	0
Run IV Clean Groundwood	59	46	36	2200	3.3	1

\* All strength tests made at approximately 65 per cent relative humidity.

Runs 1 and 2 were made under ordinary conditions with recirculation of the white water. As the experimental machine at the Laboratory is only a 15 mesh machine, with a very limited output of paper per hour, it was thought advisable to make comparative runs 3 and 4 without circulation of white water. In this way, it was possible to obtain some idea of the relative loss of stock by carefully weighing the pulp into the beater, also the finished paper and the small amount of broke produced.

According to this procedure, the conversion loss of the clean pulp was 7.5 per cent while the infected pulp lost 16.0 per cent. Table II shows the comparative strength tests on waterleaf all groundwood pulps.

The paper made from the clean ground wood showed 2½ times the bursting strength and double the tensile strength of the paper made under similar conditions from the infected pulp. Under mill conditions infected groundwood pulp is used sparingly in the furnish, but results obtained indicate that in such a furnish considerable excess of sulphite or other higher grades of pulp must be used to counteract any decrease in strength of the finished paper.

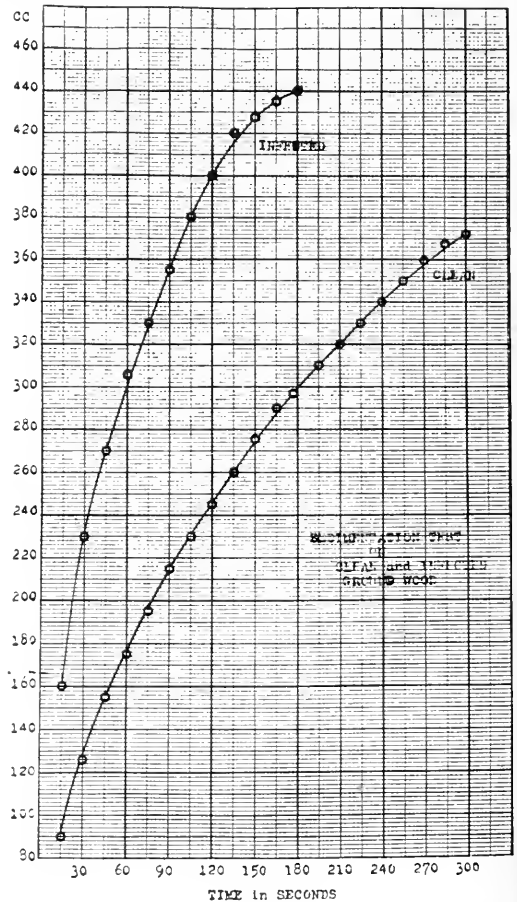


Fig. III.

*Sedimentation Test on Clean and Infected Groundwood Pulp.*

In running the infected ground wood on the experimental paper machine, it was noted that the stock was considerably freer than clean ground wood and also had a decided tendency to stick to the couch, press rolls, etc. Further, the stock foamed badly, and it was thought that this might be overcome by sizing. Tests made using, respectively, 1 per cent size with 2 per cent alum, and 2 per cent size with 2½ per cent alum did not overcome the tendency to foam. While the foaming offered no special difficulty on the experimental machine, it is believed that it would under commercial mill conditions.

#### Appearance of Finished Papers.

The paper made from the infected pulp was considerably darker than the paper made from the clean pulp. Color readings were made by the Ives Tint Photometer and are given in Table III.

Table III.—The Photometer Reading of Papers Made from Infected and Clean Pulps.

	Parts Blue	Parts Green	Parts Yellow	Parts Black
Infected .....	59.5	58.0	66.5	125.0
Clean .....	60.5	67.6	77.0	94.9

The paper made from the infected pulp was not at all ink resistant as compared with the paper made from clean pulp, the infected pulp showing, by the flotation test, approximately 1/10 the ink resistance of the paper made from clean pulp. No difficulty was experienced in sizing the infected pulp so that the resulting paper would be ink resistant.

The paper made from the infected pulp was extremely dirty, containing approximately twenty times as many specks per unit area as was found in the clean groundwood. The majority of the specks are, in our opinion, due to the conversion of the original fibre into a fibre-less mass by the action of the wood destroyers. These fibre-less masses break down under the roll and form the small specks which are found in the finished paper.

It was thought that through the decay of the pulp the ash content of the pulp might be raised above that ordinarily found in clean groundwood. This was not found to be the case, the ash of the infected pulp being .40 per cent against .44 per cent for the clean pulp.

#### Conclusions Regarding the Comparative Paper Making Qualities of Clean and Infected Groundwood Pulp.

Infected groundwood pulp, of a condition similar to the shipment received at the laboratory, had the following drawbacks in comparison with clean pulp made from similar wood and under similar conditions.

1. Decided decrease in fibre length, so affecting the yield, felting quality of the stock, strength of the finished paper, and slowness of the stock.
2. Infected pulp is too free. While groundwood pulp is often considered too slow, the extreme freeness of the infected pulp would offer difficulty in carrying the necessary water on the paper machine and in securing a good formation in the finished paper.
3. Infected pulp is very much darker, thereby dulling either white or colored sheets in which it is used.
4. The yield of finished paper based on the percentage of groundwood used is decreased approximately 10 per cent.
5. The strength of the finished paper is decidedly reduced. In a groundwood sulphite furnish this decrease in strength would necessitate the use of a larger percentage of the more expensive sulphite pulp in the furnish.

6. Infected pulp on the paper machine offers difficulty in sticking to the couch and press rolls and in excessive foaming.

7. Infected pulp will require more sizing.

8. Infected pulp will make a very dirty sheet.

(To be Continued.)

#### PACKING FOR EXPORT.

The packing of goods for export is not a matter to be lightly passed over, nor one that can safely be left to the discretion of an untrained shipping clerk. On packing depend the arrival of the goods at the station of the foreign buyer, the amount of rail and ocean freights charged for their transportation, and often the amount of customs duty that must be paid before their admission to the country of destination. It is a subject that calls for close, intelligent study.

The Bureau of Foreign and Domestic Commerce has sought to aid new exporters to foreign fields in their packing of numerous articles on correct packing received from consular officers and of a monograph (Packing for Export, edition now exhausted) containing suggestions for the preparation of American merchandise for shipment to foreign countries; and the bureau believes that the following British views on the subject, which have special reference to Latin-American markets, should be of interest. In its September 4 issue the British (government) Board of Trade Journal says:

The acting British consul general at Valparaiso states that the packing of British manufactures for the Chilean market is frequently contrasted with United States packing, to the disadvantage of the latter, and while American packing is a by-word for its defects, by comparison British packing is remarkably good.

But there are exceptions to the rule, and it should also be borne in mind that the American mistakes are largely due to the many firms coming into the competition for the first time, and they will learn by experience. Doubtless there are many exporters to Chile from the United Kingdom who thoroughly understand, either from personal observation or through directions from their buyers, what is required in the way of packing, marking and shipping for Chile. Some importers send their suppliers printed directions on these matters. There are, however, always some firms, and more now than ever, which are newly interested in this trade, and which would welcome a repetition of general advice, while even more experienced firms have something to learn from special expert advice respecting particular goods.

#### Stenciling—Essentials of Packing—Study of Tariffs.

Of general warnings, one that the shipping companies find frequently disregarded is the stenciling regulation. It is obligatory that all cases, bales, etc., for Chile should have stenciled on them in black characters the port of destination as well as the net and gross weights in kilos. The letters should be at least 2 inches high. Yet consignments continually arrive at Valparaiso bearing marks and numbers other than in stencil, and consequently the goods have to be re-marked before they can be cleared. In order to avoid confusion these marks and no others should be put on the tops of cases.

In respect of cases containing assorted goods facility and economy in clearance through customs is gained by stating the weights of each kind of goods separately on all the documents.—Commerce Reports.

### THE FOREST FIRE WARDEN.

From the Christian Science Monitor.

Like the keeper of the light in a lonely tower colored to the rocks possibly fifty miles off the coast, the warden of the forest, particularly in the mountainous sections of the northeastern part of the United States, keeps his lonely yet interesting vigil. As the keeper of the light is versed in the lore and traditions of the sea, so the sentinel in the forest tower reads and interprets the language of the woods and forests. He knows the mountain paths and byways, can tell, at a glance, the geographical position of every hill in the distance, and can point out and name the score or more of villages hidden in the valleys behind sheltering trees or intervening ridges. In his months or years as a ranger or traveling supervisor, he has learned the topography of the region over which he watches, and is able to read it as he would read an open book. But he has other aids, of course, and is not compelled to depend entirely upon his memory. In the center of his observation tower will be found a circular map, showing in detail the topography of every acre of woods and forest land within his district.

The extent of this district varies, of course, the area depending upon the range of vision possible from the tower, which is naturally placed upon the highest point available. Practice in observing and "locating," supplemented by the right kind of knowledge, makes it possible for the towerman to indicate, by reference to his map, approximately the exact point at which smoke or fire appears. Previous information furnished by the local fire warden may have assured the sentinel that the smoke may come from a brush fire made by a farmer or woodsman in clearing land, or from the camp fire of a tourist or hunter. Lacking these assurances, the towerman acts promptly and effectively. With his telephone in the lookout tower he calls, in a moment, the deputy nearest the point under observation, with the result that the fire is stopped before any considerable damage results. These details, furnished by the local warden, are recorded, along with such other facts as are regarded important, in the towerman's logbook, to be in turn submitted to state and federal authorities.

A casual visit to the quiet observation tower of a warden in the great wooded sections of the New England states, for instance, perhaps on a day when the clouds are low and the thin mists from the coast are idly drifting inland, may convince an uninquisitive sightseer that his quest has been vain, if he has come in search of the unusual or the exciting. But if the visitor has known the lighthouse keeper, the proto-type, in many ways, of the quiet man who sits in the warden's tower, or if he has himself, at some time, lived and dreamed dreams in solitary places, he will not find it difficult to persuade his host to talk. It has been said, and no doubt truly, that those who talk little quite often say much. Perhaps they say much because they talk only of the things about which they know much. So, at any rate, it seems to those who listen to the quiet story which the towerman tells of his work and his experiences, of the co-ordinated efforts among states and federal departments for greater efficiency in the important undertaking in which he and others are engaged. He seems, almost unconsciously, to speak the language of the forests and mountains, not in dialect or colloquialisms, but in the language of the man of books and of the vast open spaces, where expression is free and men are unafraid.

The story has ended in the hour which has quickly passed. Within that hour there has apparently been wrought a strange but unmistakable transformation. Where sat the towerman, one, perhaps, of a legion of his fellows, sits a sage, a scholar, a teacher.

### BOOK REVIEW. LUMBER AND ITS USES.

By R. S. Kellogg, N.P.C. Book Company, Inc., New York, price \$2.00.

Those who knew this valuable book in its first edition will gladly welcome its reappearance in revised and enlarged form, containing 392 pages, exclusive of 30 pages devoted to photos. The book, true to its name, takes up the structure and physical properties of wood, grading, standardization and measurements of lumber, and the many uses to which lumber is put. Some typical sections are: Shipping Weights, Wood Preservation, Fire Resistance, Commercial Woods, a section which contains much important data concerning the characteristics and factory uses of the principal kinds of lumber wood in the United States as well as of the most widely used imported woods. The value of this section is enhanced by the tables which, like those throughout the book, are compiled and arranged with careful thought of the greater convenience and usefulness to the busy seeker after information.

A helpful chapter at the close of the book is headed "Sources of Information about Timber". This contains a great deal of useful information in itself and includes, moreover, lists of publications of The Forest Service, The Department of Agriculture, and The National Lumber Manufacturers Association.

**Lumber and its Uses** is not too technical to be highly readable and instructive to the person who knows little of this eminently important phase of a nation's industrial life. To the craftsman who would learn more of forest products and to the man who would use it as a reference-work or refresh his knowledge of the great forests, this book, with its lucid, attractive style, its excellent plates, and definite, accurate, well-arranged information, will be an invaluable possession.

The author hardly needs an introduction. Mr. Kellogg's long connection with the wood using industries as secretary of the Northern Hemlock and Hardwood Manufacturers Association and the National Lumber Manufacturers Association and in other capacities gives him the right to speak with authority.

### RECOVERY OF WAX FROM WAXED PAPERS.

Under this heading Mr. M. S. Salamon writes, in the *Journal of the Society of Chemical Industry* that it may be of interest that in this particular case Britain is ahead of the United States. The initial experiments were carried out some eighteen months ago, and showed that the only commercially successful process involved the extraction of the wax by means of a volatile solvent. In the last nine months there has been in course of erection at Nutfield, Surrey, a plant capable of dealing with large quantities of waxed paper, and also special machinery for preparing the material for extraction and for handling the various products after extraction. This factory is practically ready to start operations. In addition to reclaiming the waste waxpaper, the plant will also deal with waxed paper or board containers, such as have been used so extensively for storing jam, margarine and other foodstuffs.

# Tentative Rational Classification of Papers

(Translated from *La Papeterie*, 41, 306-10, Sept. 10, 1919, for the Pulp and Paper Magazine, by A. Papineau-Couture.)

Here is a suggestion from France on a question that is attracting the attention of many paper makers in America.

Why should we not attempt to evolve a classification of papers which, by means of a few conventional signs, would enable the competent buyer to specify in his order the composition, the strength, and the amount of loading which are best suited to his purpose? This would have the further advantage of enabling the laboratory:—1st. To determine definitely to what class of paper a given sample belongs; 2nd. To determine if the buyer has received the goods he called for and whether or not he has any grounds for complaint; 3rd. To accumulate data respecting the results obtained by the use of various qualities of paper for a given purpose, and therefrom to arrive at a rational classification enabling both the manufacturer and the buyer to ascertain the intrinsic value of the goods offered by jobbers. The papers which are in greatest demand and which the manufacturer keeps in stock should bear the distinctive class marks, as should also the tariff and the invoice. And if, along with this classification, a standard order form were adopted, wherein would be described clearly all the specifications of the order, it would be a great boon to the manufacturer, the middleman and the buyer. The need of such a procedure has long been felt, especially when supplying paper to public administrations. Why, then, should it not be applied to all paper transactions?

In 1893, the Prussian Government made a certain classification, which we have already discussed (*La Papeterie*, 41, 98, June, 25, 1919, *Pulp and Paper*, 17, 736, 1919.); but this system, based on a theory which was too exclusive, too..... Prussian, was far from being satisfactory.

The classification which we recommend would greatly simplify the cumbersome even of the best drawn up specifications. Of course this is only a suggestion, a trial, which can doubtless be improved, but which we think worthy of consideration. We propose that the different qualities of papers be divided into 18 classes, according to their **composition**, called A, B, C, D,..... R, as shown in the following table.

Class.	Composition of stock	Maximum loading (Ash) Per cent.
A	100 per cent rags (hard rags and cotton) bleached .. . . .	5
B	75 per cent rags and 25 per cent chemical woodpulp, bleached ..	10
C	50 per cent rags and 50 per cent chemical woodpulp, bleached ..	10
D	25 per cent rags and 75 per cent chemical woodpulp, or esparto, bleached .. . . .	15
E	100 per cent chemical woodpulp, bleached .. . . .	20
F	50 per cent chemical woodpulp and 50 per cent esparto, bleached ..	25

G	50 per cent chemical woodpulp and 50 per cent straw, bleached ..	25
H	25 per cent chemical woodpulp and 75 per cent esparto, Bleached ..	10
I	25 per cent chemical woodpulp and 75 per cent straw, Bleached ..	10
J	(Absorbent), 25 per cent chemical woodpulp and 75 per cent cotton, Bleached .. . . .	5
K	100 per cent sulphite or soda pulp, Semi-Bleached .. . . .	5
L	100 per cent sulphite or soda pulp, Semi-bleached .. . . .	10
M	75 per cent jute sulphite with 25 per cent jute of jute substitute, No groundwood .. . . .	15
N	50 per cent sulphite or soda with 50 per cent jute or jute substitute, No groundwood .. . .	15
O	75 per cent sulphite or soda with 25 per cent groundwood .. . .	15
P	50 per cent sulphite or soda with 50 per cent groundwood .. . .	15
Q	25 per cent sulphite or soda with 75 per cent groundwood .. . .	10
R	25 per cent chemical woodpulp with 75 per cent semi-chemical pulp	10

N.B.—The superiority of one paper over another does not necessarily follow from its class letter, as the quality is greatly affected by the manner of preparation of the stock, which may give the finished product appearance and strength of a different class of paper.

**Classification according to strength.**—The strength is determined by means of the Leunig or Persoz dynamometer.

Class No.	1	2	3	4
Breaking length in M. * ..	4000	3500	3000	2700
Class No.	5	6	7	84
Breaking length in M. * ..	2400	2100	1800	1600

The strength of the paper is measured transversely to the length of the sheet. If it is determined by a plunger-type of tester (e.g., the Mullen or the Nooley tester,) it must be expressed accordingly. We have decided to specify only the transverse strength, as, in the majority of cases, if this is up to specifications the longitudinal strength will be sufficient.

**Examples.**

1.—Suppose we wish to specify a paper made with 25 per cent rags and 75 per cent chemical woodpulp, having a transverse breaking length of 3000 m., we would express it as follows:—D-3-15 (D indicates the composition, 3 a breaking length of 3000 m., and 15 the percentage of loading, or rather of ash).

\*The breaking length is the length of a strip of uniform thickness and width, which, if it were hung up at one end, would break under its own weight. It is independent of the width and thickness of the strip and increases with the quality of the paper.—(Translator's note.†)

I. To express the specifications for a paper requiring very great strength; e.g., for public registers, the following designation would be used: A-1-15, to which would be added, highly sized, creamy white, 150 g. per sq.m., medium calendered, size, . . . . . etc.

III.—The designation of a fine grade paper for illustrations, uncoated (e.g., for catalogs, requiring considerable strength and durability, would be D-2-15, to which we would add, semi-sized, creamy white, 70 g. per sq.m., heavily calendered, size, . . . . . etc. The manufacturer will use 25 per cent of No. 3 cotton and 75 per cent sulphite, and sufficient loading to yield 15 per cent ash.

IV.—High grade paper for a de luxe edition: F-4-15, to which we would add, semi-sized, colored, bleached esparto, 90 g. per sq.m., machine finished, size, . . . . . etc.

V.—High grade note-paper:—F-5-15, laid, octavo, gelatine sized, white 100 g. per sq.m., ordinary calendered, size, etc.

VI.—High grade typewriter paper:—B-2-10, gelatine sized, laid, quarto, pale azure, lightly calendered, 35 g. per sq.m.

VII.—Paper for dictionary: D-2-15, three-quarter sized, vellum, creamy white, good calendering, 45 g. per sq.m., size, etc.

VIII.—Paper for scholars' note-books:—G-5-20, highly sized, vellum, creamy white, good calendering, 80 g. per sq.m., size, etc.

IX.—Copying paper or first quality unsized peel:—A-2-5, white or yellowish, unsized, calendered, 22 g. per sq.m., size, etc.

X.—Paper for bills of lading, etc.:—D-2-15, three-quarter sized, white or bluish, calendered, 40 g. per sq.m., size, etc.

XI.—First quality blotting paper:—J-5-5, unsized, no finishing, 80 (or 120) g. per sq.m., size, etc.

XII.—Pergamyn paper:—E-5-5, three-quarter sized, white or yellowish, hydrated stock for grease proof, calendered, 43 g. per sq.m., size, etc.

XIII.—Kraft paper for wrapping, extra strong:—K-1-5, three-quarter sized, tan color, calendered, 45 g. per sq.m.

XIV.—Semi-white bag paper:—M-3-15, three-quarter sized, 55 g. per sq.m., glazed on one side or machine finished.

XV.—Ordinary wrapping paper:—N-3-15, three-quarter sized, glazed on one side, 80 g. per sq.m.

XVI.—Manila wrapping paper:—R-5-10, half-sized, 65 (or 80) g. per sq.m.

XVII.—Paper for book covers:—P-5-15, three-quarter sized, calendered, color, etc., 90 g. per sq.m.

XVIII.—Toilet paper:—N-5-15, half-sized, glazed on one side, natural semi-white, 30 g. per sq.m.

XIX.—One ply white pasteboard for millinery use:—G-5-10, three-quarter sized, calendered, glazed on one side, 250 g. per sq.m.

XX.—Strong semi-white pasteboard:—N-3-15, three-quarter sized, calendered, 250 g. per sq.m.

XXI.—Pasteboard:—F-5-20, highly sized, calendered, 115 g. per sq.m., size, etc., color.

XXII.—Ordinary printing paper:—H-6-10, three-quarter sized, calendered, 55-90 g. per sq.m.

XXIII.—Low grade printing paper:—P-7-15, three-quarter sized, calendered, 55-90 g. per sq.m.

XXIV.—Newsprint:—Q-7-10, half-sized, machine finished, 45-60 g. per sq.m.

XXV.—Paper for posters:—P-6-15, half-sized,

calendered or glazed on one side, color, etc., 50-60 g. per sq.m.

#### Proposed order Form.

- 1.—Serial Number.
- 2.—Name of paper
- 3.—Composition and strength (according to above classification).
- 4.—Quantity.
- 5.—In rolls or reams, flat or folded.
- 6.—Size of rolls.
- 7.—Weight per ream of, . . . . . sheets.
- 8.—Weight per square meter.
- 9.—Vellum or laid.
- 10.—Direction of wire-marks.
- 11.—With or without watermark.
- 12.—Glazed with zinc, calendered, or glazed on one side.
- 13.—Degree of sizing (with rosin).
- 14.—Gelatine sized or not.
- 15.—Coated or uncoated.
- 16.—Color.
- 17.—Stability of color.
- 18.—Longitudinal direction of paper.
- 19.—Purpose for which paper is to be used.
- 20.—Sample to be duplicated as regards, . . . . .

#### Special Specifications as regards:—

- a.—Purity of the stock.
- b.—Whiteness of the stock.
- c.—Bulk.
- d.—Absorbability.
- e.—Porosity.
- f.—Opacity.
- g.—Suppleness.
- h.—Elongation.
- i.—Appearance by transmitted light.
- j.—Finish.
- k.—Regularity of thickness.
- l.—Flatness.
- m.—Calendering.

Avoid as much as possible the presence of:—Free acid or chlorine, lack of uniformity of color, rust, spots, transparent spots, creases, folds, roughness, tears, holes.

Additional particulars:—

Price per kilo or per ream.

Delivery to be made in reams, half reams, quarter reams, wrapped up, with or without tag. The reams to be flat or folded in books of, . . . . . sheets.

Rolls to be on cardboard or wooden cores of, . . . . . diameter and hole of, . . . . . mm.

Method of packing.

Maximum weight per package. Contents.

Distinguishing marks and numbers.

Method of transportation.

Time of delivery.

Method of payment.

Address of consignee.

N.—B.—The allowance for poor quality, waste, irregularity, etc., are those laid down in the "Code des Usages Commerciaux et Industriels en Papeterie."

As a matter of curiosity let us suppose that our proposed classification had been adopted by the French National Printing Bureau, and let us see how much simpler would be the specifications, especially as regards the technical conditions imposed for each lot of paper. Taking the specifications for Jan. 1st., 1914, we would retain columns 1, 2, 4, 9, 10, 11, and would replace 3, 5, 6, 7, 8, which deal with the composition, strength, and loading, by one column. By



adding a column, "Method and degrees of sizings," we would obtain the following table:—

Lot. No.	Composition Strength and Loading.	Method and degree of sizing
1 and 2	A-2.5	Highly sized. Gelatine
3	A-3.5	
4	A-3.5	Rosin
5	B-7.5	
6	B-5.5	
7 and 8	B-4.5	Unsize.
9	B-5.5	
10	B-4.5	Three-quarter sized.
11	D-5-15	
12-16 inc.	F-5-15	
17-24 inc.	G-5-15	

N.B.—In exceptional cases it may be well to specify that the longitudinal strength shall be at least 50 per cent greater than three-quarters of the average strength.

Note.—If a paper maker were handed an order in the form suggested he should have little trouble in filling it satisfactorily and if asked to quote on such a specification there would be no excuse for wild bids.—Editor.

#### NIGHT SCHOOL POPULAR AT GRAND MERE.

The Laurentide Night School classes are now in full swing and the attendance records show that a large number of the residents of Grand Mere are taking advantage of this excellent opportunity of securing supplementary education at a nominal cost.

The registration night brought out no less than 150 pupils, and every evening since then additional pupils have enrolled. The French classes are attracting many of the members of the English-speaking section of the community, while the class in elementary English was so large that it will have to be divided into three sections. In addition to these, there are classes in Advanced English, Advanced French, Chemistry, Physics, Bookkeeping, Mathematics, Stenography, and Surveying, according to an account in the last issue of *Le Digesteur*.

A feature of this year's classes which promises to prove particularly popular and useful is the course in paper making. It is planned to have practical lectures by the heads of the different Laurentide departments upon the various processes in the manufacture of paper. On the opening night Mr. Ellwood Wilson, who is in charge of the course generally, talked on the nature and importance of forestry work in general and in connection with the pulp and paper industry in particular. Mr. Wilson's lecture was heard by a crowded class room, a number of ladies being among those who enrolled for the course.

Mr. Wilson sketched briefly the progress of forestry in Europe from the earliest known supervised forest in Switzerland, about 1300, to the present time. He described the enormous benefits derived from such supervision. The speaker then went on to enumerate the effect of forests—or the lack of them—on climate, stream flow, and supply of wood. He spoke of the terribly wasteful exploitation of North American forests, started by the early settler's need for clearings for his house and farm, and engendered by our comfortable assurance that there was wood in perpetuity.

A gloomy picture was painted of the real situation in our forests as a contrast to the supposed condition, and the need of immediate action to retrieve what might easily become a desperate case was emphasized. Mr. Wilson gave a brief but interesting resume of the needs of the forests belonging to paper mills, telling of conservation through proper methods of cutting and of reforestation by organized effort. The operation of nurseries and planting was sketched. Some interesting figures on the condition of the Company's limits were given, and the plans for the future were outlined.

In the course of the lecture Mr. Wilson paid a tribute to the provincial forest administration and called attention to the fact that the Laurentide Company had a definite policy on the forest problem long before any other paper company on the North American continent and has made considerable progress in practical directions. Other countries are only just beginning to emulate its example.

In speaking of tentative arrangements for the other lectures of the course, Mr. Wilson announced that beginning Monday, November 10th, Mr. Small would talk on the logging department's activities. It was expected that Mr. Small would occupy two evenings for an hour each evening, Monday, November 17th. Mr. Charters will describe the work of taking the logs from the river, storing them on the big pile, and also the process of groundwood pulp manufacture. He will also probably take two or more evenings. Other lectures are being arranged for.

On Friday, November 7th, Mr. Wilson delivered a second lecture, his subject being "Wood Structure and Properties Relative to Paper-Making." The course will last all winter.

#### PROPOSED SPANISH PAPER TRUST.

Commercial Attache Chester Lloyd Jones, Madrid, in United States Commerce Reports.

It is reported that a new trust to control the entire paper market of Spain is in progress of formation. The present offices maintained by *La Papelera*, the so-called paper trust, will be discontinued, their place being taken by a merchantile society of limited liability of which all manufacturers of whatsoever class of paper will be members. The new company will have control only of the sale of paper and will not be concerned with manufacture.

It is said that the new organization will start operations at the beginning of 1920, that it already is assured the co-operation of all paper-making organizations and firms and that committees are at work to determine what action should be taken to give to the industry the strongest manufacturing, mercantile, financial, and legal position.

All purchases of Spanish paper will have to be made through the trust and all sales must be made through its mediation. It is planned, therefore, to eliminate all competition in prices. The sharp rise which has recently occurred in the quotations of the shares of *La Papelera*, the present paper trust, is attributed to the favorable reception which the plans for the new organization have received. There is a strong feeling among Spanish paper manufacturers in favor of greater protection to the domestic paper industry; and the proposed organization would be a decided asset in urging such claims upon the Cortes, which at the end of this and the beginning of the next year will have the new tariff bill under consideration.

# The Formation of Froth

Written and Illustrated by James Scott.  
From the Paper Maker and British Paper Trade  
Journal.)

One does not need to emphasize the fact that when froth is at all abundant in pulp it is capable of proving to be an intolerable nuisance: it is only too plain to those concerned in the manufacture of paper. Some of the substances designed for the prevention or diminution of the trouble may be satisfactory, but the better course is to handle only those goods which are likely to yield little or none of the objectionable condition. Froth arises in a variety of ways, the chief of which will be briefly described. If anything used in pulp is impure—the term does not necessarily mean bad or defective, but unsuitable—the bother will be accentuated to an extent depending on the proportions of the undesirable ingredients.

The reason why froth is always white, whatever happen to be the colors of the substances from which it is produced, is that the light is reflected, and refracted from the hosts of convex surfaces. The blackest of ink will give a white froth, which is accounted for by this explanation. When froth appears to be slightly tinted, it is because some of the ingredients can be seen through the transparent films, or else occur inside them as tiny particles.

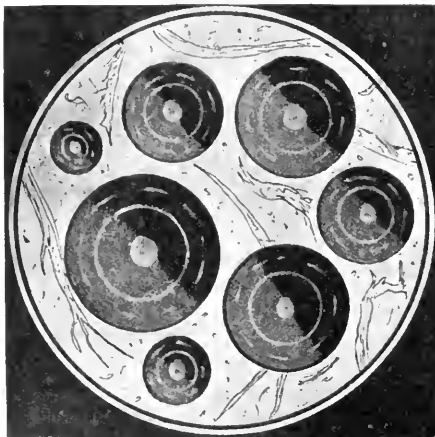


Fig. 1.—Magnified pulp froth bubbles, composed of air enclosed in films. These are always dark, with bright spots and lines. Actual diameter of space about 1-24th of an inch.

Pulp froth is found on close examination to contain a lot of soapy compounds, loadings, carbonic acid gas (i.e.  $\text{CO}_2$ ) and slender fibres. Among the principal items responsible for the development of these results are rosin size, in which free or uncombined alkali such as soda carbonate is in excess. Either too much soda has been used, or else it has been improperly prepared, so that a percentage of it remains in an unaltered state. Alum is another source of the trouble. This is a compound of sulphate of alumina and sulphate of potash, and if it carries an excess of sulphuric acid it is almost sure to become objectionable. It is most noticeable in mills where back water into which it has flowed

is repeatedly used. It releases  $\text{CO}_2$  from the lime carbonate and other carbonates which are nearly always present in water, more particularly if it is at all hard.

If there is any free soda carbonate the alum will almost certainly develop a lot of the bubbling gas.

When bleaching powder has been added too liberally, and is retained as such instead of having been washed out, or has not been entirely neutralized with anti-chlor, undue frothing must be expected.

Pigments, of both organic and inorganic origin and nature, are liable to produce froth. Included in the former class are the orange, pink, and red lines, the effects of which are too well-known to require reiteration. They have to be very carefully managed. Among the second lot are the various ochres, and these, too, may often be very annoying.

Too much starch is bad in this direction, and if it has had a chance to combine unequally with clay it will become unusually froth making. If water containing starch and clay is kept for a inconvenient length of time, the liquid will seriously ferment. Air sucked up in pumps is another prolific frother.

The reader will be aware that even plain water can be caused to rise into bubbles if it is violently agitated, but the thin films thus due to the temporary entanglement of air rapidly subside. If a little soap is mixed up with the water, however, we secure bubbles which last a longer time, because the films consist of stiffer material. It is on this behavior that the formation of froth in the heaters depends, and its amount varies, being much less where absolutely fresh water and high grade commodities are dealt with.

It is worth mentioning that  $\text{CO}_2$  (carbonic acid gas, or carbon dioxide) is the compound gas consisting of carbon and oxygen which are disengaged from aerated mineral waters when bottles of these things are newly opened. It has previously been compressed into the contents, and is released when given the opportunity. But in the ordinary way the bubbles would vanish quite quickly, and as the attractiveness and tastiness of the beverages are largely due to its presence, makers habitually incorporate with the liquid small quantities of some harmless substance such as gum arabic, so that when emerging the films of the bubbles will last for a longer period unbroken, as they consist of layers of which the gum forms a fair proportion. In this case intense and prolonged frothing is desired; with the paper-maker the reverse is aimed at; so that contrary methods must be devised, and ingredients likely to saponify discarded.

Saponification practically means soap-making, and weak acids and alkalis are necessary in the process. It is customary now to substitute the term hydrolysis but there are so many varieties of the latter that it is apt to be misleading if too exclusively used. Water is always necessary, and the substances are decomposed in its presence, and chiefly with its help.

The greater the amount of saponifying material, the more minute and persistent will be the components of the froth as a rule. When it resembles a sort of white cream, in which separate bubbles are not distinguishable by the naked eye, it will disclose on magnification

a large number of minute glistening films, among which will be detectable detached fibres, odd, shapeless pieces of matter, flakes, and lumps of gelatinous refuse.

Froth may be prevented by taking care in connection with the following subjects:

Continuous use of back water should be discarded. It has been advised, and painstaking makers are well acquainted with the necessity, that beaters should be preferably thickly loaded.

Alum should always be tested to see whether it contains any free sulphuric acid. This means an excess beyond that necessary to evolve a satisfactory compound. Thorough washing out of bleach residues is imperative; as is also the case with all free acids and alkalies. Even when anti-chlor has apparently ef-

was hindered by using only the purest ingredients. These oils simply spread the films flat.

The froth oil, which finds so wide an acceptance, and is considered very handy for the purpose of allaying the trouble, is a compound consisting of bleach, linseed oil and turpentine ("turps"). A layer of it is depicted in No. 3, after thorough shaking. The globules indicate one oil in another, and get so flattened in films that they hold down superficial substances, and prevent them rising as bubbles.

It may be noted that solution of zinc chloride will prevent decomposition of starch and clay. This liquid is made by dissolving zinc—it is best in the form of dust—in hydrochloric acid until effervescence ceases.

Froth should not be regarded as an unavoidable impediment, but a state needing elimination.



Fig. 2.—Magnified transparent layer of crystalline matters from dried films of pulp froth; the distension of which, in solution, enables the bubbles to form. Actual diameter of space about 1-24th of an inch.

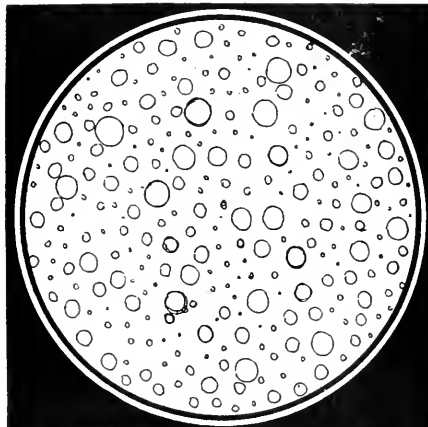


Fig. 3.—Magnified drop of froth oil, containing globules which flatten on the surface of pulp liquor into discs which amalgamate and hold down the floating substances. Actual diameter of space about 1-24th of an inch.

fected its purpose, retention of any of it will be liable to detrimentally react with other substances and cause frothing.

Extreme agitation should not be allowed, and fresh water is always to be preferred for the dilution of the stuff at the feed box.

It is inadvisable to use new rosin size, and the less free soda carbonate it contains the better. It is worth mentioning that air bubbles, although they look quite sparkling to the naked eye, can always be determined microscopically, and are then revealed as dark, almost black objects, with lines and summit spots of luminous brightness. This appearance is due to interference with the passage of light through them. On the other hand, globules of oil are quite clear and transparent, while those of other substances have equally distinct aspects, by which their group-character can be recognized, although analyses would be required to decide exactly of what substance they were composed.

Some air or froth bubbles are shown in No. 1, while a layer of froth, after discharge of its gases and evaporation is shown in No. 2.

The application of turpentine (commonly called "turps"), or else paraffin, has frequently been found of great service in preventing froth, but it would be much more advantageous if the formation of froth

## THE FRENCH-AMERICAN BANKING CORPORATION.

Pulp and paper manufacturers who are interested in French business will be glad to know about the French-American Banking Corporation and the service it offers.

This corporation, which is located at 67 William Street, New York City, was organized last April with a capital of \$2,000,000 and a surplus of \$500,000, all paid in. Half of the stock is held by American interests and half by French. The American interests are the First National Bank of Boston and the National Bank of Commerce in New York, each holding one-quarter of the stock. The French participant is the Comptoir National d'Escompte de Paris, which holds one-half of the stock.

The interests behind the corporation represent combined resources of one and a quarter billion dollars. It was organized to promote trade between France and the United States, aiming to place at the disposal of American business men banking facilities in France as advantageous as Frenchmen themselves have.

In a local house organ we notice this apt definition of salesmanship: "Salesmanship is the art of selling goods that don't come back to people who Do."

### WHY IS A BEATER?—An ANSWER.

This paper is a reply to "Questioner," page 870, Pulp and Paper Magazine of Canada for Oct. 2. As the present contribution does not seem to cover all the points in the question, other replies are requested.

Having studied the beating process in my capacity of a papermaker and mill engineer, I noted with great interest that our young "Questioner" takes a keen interest in beaters. Paper is certainly made in the beater, a Jordan acting as an additional refining surface for the purpose of removing such fibre bundles as would clog the screens. In fact a Jordan is mostly used for the purpose of speeding up production and to give the stock a character, which, owing to the lack of a properly dimensioned beating surface, could not be obtained without it. Our old papermakers did not know of it.

As set forth in my "Efficiency of Beaters," which was printed in the columns of this magazine in 1914, a beater acts as a dissolver, as a mixer and as a disintegrator. The furnish plus a given quantity of water is being propelled in the tub for the purpose of obtaining the speediest possible dissolution so as to prepare the stock for disintegration by the beating surface. In order to attain a uniform mixing of the furnish with the water, the roll is provided with propelling spaces, the latter varying in size in accordance with the nature of the furnish. Furthermore, owing to the circumferential velocity of the roll, and owing to the air, adhering in bubble shape to the surface of the fibres, the flybars may be secured in a way and manner to remove the entrained air from the spaces between the flybars. Therefore I arrange flybars spirally, that is to say, similar to the teeth on spiral gears. Thus, I obtain not only a superior scooping effect and with it a higher propelling efficiency, but I also propel the stock from the midfeather to the outside.

No doubt, our friend has noticed that paper stock travels much more slowly along the midfeather, which means that this stock will not pass the bedplate as often as would the stock which travels along the wall of the tub. Consequently, by scooping such stock against the outer wall, a thorough mixing of the furnish is obtained at a saving of power.

The beater roll is a paddle wheel, and must be compared to an impeller of a primitive form, if the flybars are arranged in the old-fashioned straight manner. It is therefore of foremost importance to increase the propelling effect of any roll to the maximum possible result obtainable. Therefore, the depth of the spaces between the flybars and the shape of such spaces is as important as is the velocity at which the stock travels towards and into the beating surface. The faster the stock travels, the less power is required to accelerate the stock in the tub to the velocity of the roll. This sounds like lifting ones self by ones boot straps, but is not so. It must be kept in mind that a certain weight, comprised of stock plus water must be brought to the circumferential velocity of the roll, as otherwise the roll would be unable to propel.

This is borne out by the fact that the circumferential speed of a roll is limited and must be kept below say 28 feet per second. With increasing speed (above 28 feet) a marked decrease of circulation can be noted, the stock being unable to enter the spaces between the flybars in an orderly manner.

The kinetic energy, being contained in the stock, which is scooped up between the flybars must be used

to lift the stock as high as possible. In fact I design my backfall in an advanced manner, based upon the diffusion vane principle of a high efficiency centrifugal pump. Naturally, the mechanical mixture of water plus stock does not follow the hydraulic laws of pure water. Indeed very much depends upon the consistency and the nature of the stock.

But it can be said that in following practical data, paper stock may be elevated much higher than is ordinarily the case, which permits me to use a sloping bottom of the tub.

This means, that by making use of the kinetic energy contained in the stock (when between the flybars), the circulation and the mixing efficiency of a beater can be very much increased without any additional expenditure of power. In fact power can be saved to a considerable extent.

With a backfall permitting this, with a sloping bottom and by means of a properly curved and rounded off tub, I have beaten all rag stocks of heaviest concentration without using the paddle during the whole beating process, starting up excluded.

In weighing the above, one can readily see, that the idea that a fast circulation requires an increased expenditure of power is an exploded theory.

Having dealt with the beater as a mixer, I shall discuss the beating surface. No doubt, it is of little use to circulate stock without affording the same a most energetic brushing of the gentlest possible character. Although a great many beating devices have been constructed to improve the beating by means of a roll, it must be borne in mind that the roll still represents the most flexible fibre preserving apparatus known. Fibres should be reduced to the size wanted and should not be "broken down."

Fibre bundles, crowding on top of each other should be given the opportunity of lifting the beating organ, as is the roll, during disintegration. If forced through a pre-adjusted reducing surface, with no flexibility provided for, the fibres must suffer. The beating process must be compared to an application of a pressure suitable for the furnish, a series of edges of the reducing bars pulling and drawing the fibres to the desired shape and thickness. With changing pressure and by providing more or less fly and bedplate bars, a variation of the product can readily be obtained. To change the number of fly and bedplate bars is beyond the beaterman's capacity. His duty is to vary the pressure upon the fibres and thus to produce the paper desired.

Naturally, the consistency of the stock is also of importance to him, a thin furnish producing a free stock, a thick furnish a slower stock. It is therefore the duty of a mill engineer to provide a maximum number of bedplate bars, as it is of no avail to try and save money by purchasing a cheaper, narrower bedplate.

This does not mean that a wide bedplate can be inserted in any beater. The roll must be heavy enough to allow for this, as otherwise a very poor disintegration would result. This means that all rag stock requires a heavier roll than an all-wood furnish. I am accustomed to classify the beating surface according to the flybars actually coming in contact with the bed plates. Let us consider the roll at rest and lowered upon the plate, and a heavy sheet of board placed between bedplate and flybars. The imprints represent the actual beating surface, which can be expressed in square inches. Ordinarily, this could be calculated just as well, if the diameter, the width of the roll, the

thickness of the flybars, the number and thickness of the bed plate bars are known.

The actual beating surface being ascertained, the pressure per square inch beating surface can be derived by dividing the total weight of the roll by the beating surface (in square inches).

This goes to show that the roll must have a given weight for a certain stock, and proportionate to the latter's strength of the stock.

As mentioned above, it is of no avail to circulate the stock without affording the same a maximum brushing. Thus a relatively heavy roll and a very large beating surface are the most economical attributes which any beater of a fast circulation can have.

Such a beater requires less power on the basis of 100 lbs. of paper. It saves space, prevents the formation of lumps in the sweeps, needs little attendance, is a first class mixer and produces a better paper all around. It is a well known fact that stock, having become water logged, will settle quickly again, no matter how often it is stirred by hand, and only a rapid circulation can keep the stock and the water well mixed. The larger the beating surface, the less strain will be thrown upon the Jordan, which is intended to act as a safety catch for fibres not properly reduced or other fibres by nature thicker and stronger.

It cannot be considered good practice to degrade the beater to a doubtful mixer and to use the Jordan as almost the sole beating surface. The plug of a Jordan being surrounded by fibres is firmly held in position, thus forming a rigidly adjusted space whence the fibres must be discharged in a reduced form. However it is not the object of papermaking to break up any furnish into the stock desired, but to use the cheapest possible furnish.

Relatively cheap fibres yield as strong a paper, providing they are treated under flexible pressure. If rigidly adjusted reducing apparatus is used to reduce fibres, a stronger and therefore more expensive furnish must be used, which does not increase dividends.

And that is what we are after: DIVIDENDS.

—LEO SCHLICK, M.E.,

Consulting Designing Engineer, Boston.

### LESS THAN FOUR DAYS' SUPPLY OF NEWSPRINT.

Comparing the stocks on hand at the domestic mills on October 31st with their average daily production based upon the weekly and monthly reports for the 18-month's period ended September 30, 1919, the figures of the Federal Trade Commission show that:—  
Newsprint paper mill stocks equal slightly less than 4 days' average output.

Book paper mill stocks equal slightly more than 9 days' average output.

Paperboard mill stocks equal slightly less than 8 days' average output.

Wrapping paper mill stocks equal slightly less than 17 days' average output.

Bag paper mill stocks equal slightly more than 5 days' average output.

Fine paper mill stocks equal slightly more than 28 days' average output.

Tissue paper mill stocks equal slightly more than 13 days' average output.

Hanging paper mill stocks equal slightly more than 13 days' average output.

Felts and building paper mill stocks equal slightly less than 7 days' average output.

Miscellaneous paper mill stocks equal slightly less than 27 days' average output.

Total paper mill stocks of all grades equal slightly more than 10 days' average output.

### Imports and Exports.

Newsprint is the only grade of which the United States is a heavy importer. Practically all of this tonnage, the value of which amounted to \$3,308,723 for September, 1919, is imported from Canada. The value of the exports of newsprint in September, 1919, amounted to \$491,539, a decrease from August of more than 43 per cent.

Newsprint, book paper and fine paper were the principal grades exported, the combined value amounting to \$1,941,276 for September, 1919.

The value of the total imports of all grades was slightly greater than for August, 1919, and exceeded September, 1918 \$303,491. The value of the total exports for September, 1919, was \$326,486 greater than the value of the exports for September, 1918, but was less than the value of the imports for September, 1919.

### WISCONSIN PAPER MILL SOLD.

The Marinette and Menominee Paper Company mills at Marinette, Wis., have been purchased by Herman Elsas, president and manager of the Continental Paper Bag Company, New York.

The consideration is reported to have been \$1,500,000.

### CARL RIORDON HEADS ALUMNI.

At the dinner of graduates in Montreal last Saturday, a Montreal branch of the University of Toronto Alumni Association was organized. Carl Riordon occupied the chair and became first president of the Montreal branch. W. J. Francis is vice president, and Roy Campbell, secretary.

Both president and secretary are prominent figures in the pulp and paper industry of Canada.

### FEDERAL TECHNICAL EDUCATION BEGUN.

Ottawa, November 24.—It is expected here that Professor Gill, of Queens University, who was last week appointed Director of Technical Education for Canada, will commence his duties immediately in connection with the administration of technical education throughout the Dominion, as provided for in the Technical Education Act passed at the regular session of Parliament. The expenditure of \$700,000 in the various provinces is proposed, and it is expected that Prof. Gill will at once confer with representatives of the various provinces in regard to the detail of the organization work.

### SMALL INCREASE CAPITAL OF HOWARD SMITH PAPER MILLS.

Shareholders of the Howard Smith Paper Mills, Ltd., are being advised by circular that the directors of the company decided at a recent meeting to increase the common stock capitalization of the enterprise from the present total of \$1,162,500 to \$1,250,000. The additional \$87,500 par value of the stock is offered at par to shareholders of record of November 29 next in the proportion of one share of new for every 13 2-7 shares of old stock held. Fractional shares will not be issued, subscriptions for full shares only being accepted.

The right to subscribe for the new shares will expire at the close of business on December 13 next, with payment in full a week later.

At yesterday's price of \$143 for the stock, the value of the rights to the new issue would work out around \$3.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-14. Detection of soda and sulphite wood pulps in paper.** R. Wasieky. *Papierfabrikant*, 1918, 16, 212-3, 228-9. *Z. angew. Chem.*, 1918, 31, Ref., 371; thru *J. Soc. Chem. Ind.*, 38, 1919, p. 131A. Pieces of the paper to be examined are boiled up once with a 0.2 per cent aqueous solution of Gentian violet, allowed to remain in the liquid for two minutes, rinsed with 95 per cent alcohol and steeped for two minutes in 95 per cent alcohol containing 0.5 per cent HCl. They are subsequently washed for 15 minutes in 95 per cent alcohol, which is renewed once, and finally washed in water. Papers made of pure soda wood pulp lose the color entirely, whereas sulphite papers are stained a deep violet. Papers of mixed composition may be analysed with an accuracy of about 5 per cent by comparing them with known standards.—A.P.-C.

**Clarification of waste liquors containing paper pulp and alkaline substances.** H. Hofer, Sillein, Hungary. German Patent No. 309,406. *J. Soc. Chem. Ind.*, 38, 409A (1919). The liquor is treated with Zn salts, especially ZnSO<sub>4</sub>, which reacts with the alkaline substance present (resin size, calcium hydroxide, etc.) to form a precipitate which carries down with it the suspended paper pulp. The clarifying effect of Zn salts is better than that of the Al compounds commonly employed. The Zn salts may be partly replaced by Mg salts.—A.P.-C.

**K-5. Apparatus for crushing paper pulp and other fibrous material.** (Appareil à broyer la pulpe de papier et les autres matières fibreuses. Fr. patent No. 490,877. Chas. Menzies Cowan and John Brown. *Le Papier*, 22, 196. (July 1919). Consists essentially of one or more pairs of grooved rolls. The grooves are longitudinal and inclined to the axis of the rolls, the inclination being in opposite directions for the two rolls of any pair. They may be rotated at different speeds and the distance between them is adjustable.—A.P.-C.

**K-6. Process for de-inking paper.** (Procédé pour enlever l'encre d'imprimerie du papier.) Fr. patent No. 492,195. Societe Jesperen. *La Papeterie*, 41, 196. (July 25, 1919). Milk of lime is added to the paper either before or after pulping, but preferably before. The beating is continued until the mineral oil rises to the surface, carrying the ink with it, and it is removed by suitable means. The process is inapplicable if the vehicle contains no mineral oil.—A.P.-C.

**K-18. Process for making pasteboard.** (Procédé pour la fabrication des cartons.) Fr. patent No. 492,096. C. Pullos & Papiers. *La Papeterie*, 41, 195. (July 25, 1919). Pulp which has been partially deinked during an alkaline cook, and which is consequently useless for making paper, is mixed with a suitable amount of good pulp, or with ground cork, or with lime, or with both, according to the nature of the deinked pulp, and the whole worked up into pasteboard.—A.P.-C.

**L-4. Paper sacks.** W. Herzberg. *Mitt. k. Materialforsch. Anst.*, 36, 230-7. 1818. *J. Soc. Chem. Ind.*, 38, 181A. 1919. Results are given of tests applied

to sacks from strong paper pasted together with good adhesive. Sacks accepted for packing superphosphates were made of three thicknesses of paper showing a mean breaking strain of 4.48 kilos, when tested in strips 180 mm. long, 15 mm. wide, at 19 deg. C. and in air with 65 per cent moisture, while its resistance to folding, i.e., the number of double folds by Schopper's method) was 186. Sacks for table salt were made of three thicknesses of paper showing a breaking strain of 4.84 kilos, and folding resistance of 518, while those for cement were of paper with an average breaking strain of 4.5 kilos and resistance to folding of 1,598.—A.P.-C.

**L-O. Improvement to machinery for making seamless pulp tubes.** (Perfectionnements aux appareils pour la fabrication des tubes en pâte à papier sans joint.) Fr. patent No. 491,136. Calvert Thame. *Le Papier*, 22, 233-4. (Aug. 1919). When the tube has been made to a suitable thickness, the shutter which closes a slit in the cylinder is allowed to drop, thereby slightly decreasing the diameter of the mould, and the tube can readily be withdrawn.—A.P.-C.

**R-1. The paper industry in Switzerland.** (*L'industrie papetière en Suisse.* *Le Papier*, 22, 249, (Aug. 1919). Also, *Rev. Univ. Papeterie*, 2, Nos. 8, 10, (Aug. 15, 1919). The Swiss paper industry has been very seriously affected by the lack of raw materials during the war, and at the present time the outlook seems very serious owing to the lack of demand for paper. The Swiss paper manufacturers have formed a company with the object of centralizing sales and distributing orders to the various mills in such a way that the work shall be done in the most advantageous and economical manner possible.—A.P.-C.

**R-1. The paper industry in Roumania.** (*L'industrie papetière en Roumanie.* *Le Papier*, 22, 249, (Aug., 1919). There are 7 paper mills in Roumania, with a total capital of 18,708,000 fr. In 1913 they used 1,768,850 fr. worth of domestic raw materials and 823,599 fr. worth of imported raw materials. For 1914 the figures were 4,513,999 and 1,051,000 respectively. The value of the paper was 10,561,000 fr. in 1913 and 10,822,657 fr. in 1914. Owing to the high cost of fuel and of raw materials no paper is exported, but in 1913 3,619 tons of pulp were exported, of a value of 824,965 fr.—A.P.-C.

**R-1. The paper industry in Finland.** (*L'industrie papetière en Finlande.*) P. F. *Le Papier*, 22, 200. (July 1919). A short sketch of the development of the paper industry in Finland from its origin to the present day.—A.P.-C.

**R-5. Exports of paper from England to France.** *Le Papier*, 22, 259-60. (Aug., 1919). Graphs are given showing the exports of printing paper and of writing paper for the first six months of 1917, 1918, and 1919, respectively.—A.P.-C.

**R-5. The French paper trade during 1917, 1918, 1919.** (*Le commerce du papier en 1919 [cinq premiers mois].* *Années 1919, 1918, 1917.*) *Rev. Univ. Papeterie*, 2, No. 8, 6-8 (Aug. 15, 1919). A detailed statement of the paper trade of France during 1917, 1918, and the first 5 months of 1919.—A.P.-C.

**R-7. Practical training of the paper-maker. How to become machine-tender.** (L'éducation pratique du papetier. Comment on devient conducteur de machine.) E. Arnold. *Le Papier*, **22**, 2301-1, (Aug. 1919). A description of the various stages through which the young paper-maker must pass to qualify him to be machine tender, and advice as to how he should tackle his work. (Cont'd.)—A.P.-C.

**R-12. Congress of French paper manufacturers.** (Congrès des fabricants de papier.) *Le Papier*, **22**, 201, (July 1919). The 52nd Congress was held in Paris on June 3rd, 1919, 86 firms being represented. The eight-hour-day law and a bill concerning hydraulic power were the principal subjects of discussion.—A.P.-C.

#### TECHNICAL ASSOCIATION PAPERS.

I have before me a copy of "Technical Association Papers, Series II," which in itself more than justifies the maintenance of the Technical Association of the Pulp and Paper Industry, and which in itself is worth more to every member of the organization than it costs him to meet his annual dues. Of course I do not pretend to be sufficiently versed in the technology of papermaking to appreciate fully the significance of the scientific discussions contained in the review; but it requires nothing more than ordinary commonsense and a casual examination of the book to understand its great value to one who seeks to master the art.

The Technical Association is one of the youngest members of the trade organization family. It was only a few short years ago that a few enthusiastic individuals brought it into being. At that time most of the men connected with the industry looked upon it as a harmless, though altogether unnecessary institution. Some regarded it as simply one more added to that already countless number of associations of no practical value, and with little excuse for their being except to afford an outlet for the theoretical views of overeducated cranks. I had some such notion myself. It was not long, however, until the association began to fill a long-felt want and to prove itself of immense value to the industry. Instead of contenting itself with being merely a praiseworthy association, it has developed into a veritable school in which the technical science of papermaking is taught.

Fortunately this organization fell into good hands at the very beginning and has had competent management ever since. This has enlisted the sympathy and support of the best informed men in the industry, who are generously undertaking to distribute among their associates the benefits of their painstaking labors. No man who is well up in the art of papermaking, and whose ambition it is to keep up, can afford to disregard the work of this association; much less can one who is just beginning his study of the many scientific problems involved afford to miss this practical schooling. In my opinion every concern engaged in the manufacture of pulp or paper can do itself no better service than to put into full membership in the Technical Association every man in its employ who has charge of any technical process connected with the operation of the plant. And this is true, although they may seldom have the opportunity to attend a meeting. A careful study of the literature of the association must inevitably add to the value of the service of the student. It is the cheapest way to better manufacturing results of which I have any knowledge.

One need only take a casual survey of the contents of the publication recently issued to appreciate its value. It begins with a carefully prepared article on

Analytical Methods for the Paper Industry, by W. H. Gesell, chairman of the Committee on Standard Methods of Testing Materials, T.A.P.P.I.: a comprehensive and thoroughly practical treatise. This is followed by an analytical and descriptive study of Vegetable Fibres Used in Papermaking by Fred C. Clark, chairman Committee on Paper Testing. Then comes a most helpful compilation of the Literature of the Paper Industry, by Miss Hubbard, of the Committee on Bibliography. So we might continue; but this suffices to indicate the kind of matter that covers the 118 large pages.

A good portion of the book is devoted to a full report of the proceedings of the fourth annual meeting of the Technical Association, not only reproducing the formal papers but likewise giving the stenographic notes of the informal discussions; all of which are intensely interesting and instructive to paper-makers who want to become more efficient.

I may be pardoned for referring so often to the work of the Technical Association when I say it is because its work appears to me to be of incalculable value to the industry, and will become more so. If you have not seen "Technical Association Papers," get it without delay.—"C.F.M." in "Paper."

We second the motion.—Ed.

#### CORRESPONDENCE RE ESTIMATION OF PULP.

Having received an inquiry as to whether the double stain and the use of the filarmicrometer should not be included in what might be called a standard method of estimating sulphite and ground wood in newsprint paper, "Snowshoe" states his view as follows:

In reply to your questions re my article on "Estimation of Pulp in Paper" in *Pulp and Paper Magazine*, I would observe as follows:

I find the distinction between sulphite and ground wood when properly stained with iodine absolute. The ground wood appears as a strong yellow while the sulphite is colorless and the differentiation is almost perfect under the microscope. It is substantially impossible to mistake mechanical fibre (stained) for sulphite, but there may be a slight (very slight) tendency on the other hand to mistake a sulphite fibre here and there for ground wood, but it is of no moment.

The solution used is as follows:

Water 60c.c.

KI 6 grams.

I, 3.45 grs.

Glycerine 6 c.c.

Double staining is quite unnecessary, as the single stain differentiates perfectly if properly carried out.

As to fibre micrometer measurements of fibres, this would have to be done with very considerable care or the results would be misleading and the time taken would likely be altogether too long for ordinary technical work in papermills.

Doubtless an elaborate and painstaking examination of a ground wood and sulphite mixture with micrometers and special stains would eliminate the personal equation to a large extent, but it would be a useless refinement as regards newsprint paper, due to the variation in relative content of the two fibres.

As to the experience necessary to estimate ground wood and sulphite rapidly under the microscope, it is chiefly a matter of a little painstaking persistence in examining definite known mixtures properly stained with iodine.

## BRITISH TRADE NEWS

(From Our London Correspondent.)

London, 13th November, 1919.

The constitution of Bentley and Jackson, the well-known firm of papermakers engineers, has undergone a change. Mr. George Bentley has left the firm after a long and honorable career, and his retirement as an active worker will be much regretted. He occupied the position of chairman and under his guidance the firm made rapid strides, their well-known papermaking machines being notable for success all over the world. Today Bentley & Jackson are full-up with orders and their future promises to be a busy one. Mr. James Nuttall and his three sons will now control the firm and in their hands the success achieved in the past will be continued and enhanced in the future. The retirement of Mr. George Bentley severs a valuable link from engineering circles. His keen foresight and shrewd business disposition was valued in the paper industry of the United Kingdom and at times like the present when the economic position requires the experienced and skilful handling of an expert, Mr. Bentley's resourceful knowledge should be missed. However, Mr. Nuttall, Sr., who has over 50 years experience with Bentley & Jackson, Ltd., is the right man in the right place and very highly respected. What he does not know about papermaking engineering is not worth knowing.

### Pulp from Canada.

Shipments of pulp from Canada are increasing during the past six weeks, the latest Government returns showing that 7,707 tons of ground wood and 1,660 tons of sulphite have arrived in one week. In ground wood the Dominion is getting a fair share of the market here, the arrivals for the week under consideration being 7,707 tons compared with 1,716 from Norway and 411 tons from Sweden. A return of this character must be satisfactory to pulp men in Canada, because I have seen the times when the Dominion did not even appear in the list for ground wood. If there is a demand now for Canadian pulps surely the future must increase that demand. There is only one point to be considered and that is—study the market and its wants. Then look after your shipping. The pulp market today in England is firm and a fair amount of business is being done. Norwegian prices in London today are as follows: Bleached sulphite £36; easy bleaching sulphite £29 to £30; strong sulphite £25 to £25 10s; easy bleaching soda pulp £24 10s; strong soda pulp £23; ground-wood (moist) £7 15s 6d to £8 c.i.f. British ports. For delivery next year add 10s all round. The Norwegians see that in Canada they have a serious competitor in the British market. The feeling, however, is to keep trade within the Empire.

### Paper and Prices.

News-print is not changed much in prices, but for other papers there is a stiffening in quotations. I was speaking to a master printer this week and he says complaints are rife against the mills over prices, these being trouble today what they were in 1914. He considers there should be a tendency to reduce quotations now that the raw materials market has settled down. Norwegian quotations are about as follows: £48 a ton for glazed and M. G. kraft; M. G. pure sulphite, thin substance of d.e. 7 lbs., £65 per ton; friction glazed leather boards £31 5d per ton; wood pulp boards £26 to £27 a ton. English kraft paper is £53 10s a ton and English book paper 8d per lb. and fine printing paper 6d per

lb. The London Master Printers have deprecated the action of one of the British mills. One of its members said that his firm sent an order for paper within a week of the quotations rising. The mill dallied with the order for a week and then stated they would take one-third of the order at the price quoted, plus 5 per cent, and that the two-thirds of the order remaining at a price ruling when the paper was delivered. It is now contended that the Government helped paper manufacturers during the war and such action as indicated above does not help industry and was not fair play, particularly when the mill had had raw material in stock. Master Printers are being urged to take action.

### Mill Profits.

The Star Paper Mill, Lancashire, reports a dividend of 3s per share on the preference shares and a dividend of 5s per share (and a bonus of 5s per share) on the ordinary £5 shares. £15,314 is being carried forward. For the half year to October, 1918, the ordinary shares got 10 per cent per annum and a bonus of 15s per share, while in the following month a bonus of 100 per cent was paid in shares. The Star Mill is a progressive concern and a valuable adjunct to an industry.

### Japan Wants Pulp.

A good deal of information has reached London to the effect that Japan wants pulp. It is difficult to understand why this should be the case, and inquiries should be minutely made before any business transactions are entered upon. Through various sources here they are asking for pulp. The United States usually have a big share of supplying the Japanese market.

### Chemicals.

The market for chemicals is brisk and there is a good deal of business passing on home and export account. Bleaching powder is £15 to £17 for export and alum £19 per ton. Very little in the way of caustic soda is being offered. Soda crystals are firm at £6 a ton for export. Sulphur is scarce and very firm.

### Notelets.

Brother F. J. Boeber Farrel has been installed Worshipful Master of the Panyms Lodge of Freemasons for the ensuing year. The installation dinner that followed was greatly enjoyed by the paper and pulp men present.

The steamer "Gyp" has arrived with 1,357 tons of groundwood from Chicoutimi. The "Keyingham" and "Leicester" have also reached port with large cargoes from the Dominion.

Mr. Alexander Turnbull succeeds Mr. E. Chalmers as managing-director of Messrs. E. Chalmers & Co., Ltd., papermakers, of London.

A Finland pulp maker wants £30 a ton for easy bleaching sulphite, but the quality of it is not stated. Similar offers are being made to Poland in its unsettled state of political strife.

The students of London University and Bart's Medical School had a "rag" this week. Outside the "Daily News" office was a wagon full of newsprint and the students made a platform of the newsprint from which speakers addressed their confreres. It is unusual to see a meeting outside a newspaper office in the heart of London—and particularly a students' assembly. Let us hope McGill will not follow the example in Montreal.

Early to bed and early to rise,

Keeps the blues from your brain,

And the red from your eyes.



# PULP AND PAPER NEWS

The Abitibi Company's locomotive was suffering from pleurisy, at least there was serious trouble with its chest. By burying the chest in the forge fire and working in very uncomfortable positions, Mr. Morley and his crew closed the cracks.

Iroquois Falls has a by-law requiring all children to be in doors by eight o'clock, unless accompanied by a guardian.

During the last week in October, the four machines of the Abitibi Power and Paper Co. made 1,428,27 tons of newsprint.

The Laurentide Company in October made a daily average of 215 tons of newsprint, 45 tons of board and 12 tons of wrapper.

One hundred and eight employees of the Laurentide Company have been in the firm for twenty years or more.

Reports are just "leaking out," as it were, of the fine time the Belgo-Canadian Pulp and Paper Co. gave the Canadian Export Paper Co. officials on October 28th. The operations were carried out under Work Order 205, issued by Mr. Stadler.

Mr. G. F. Steele is in England in the interests of the Canadian Export Paper Co. Mr. Wm. C. Powers is in charge of the London office.

T. Marshall Dix, Vice-President of the Spaulding and Tewsbury Co., of Boston, Mass., was in Toronto recently calling upon the trade.

George C. Winlow, of the Canada Paper Co., Toronto, returned lately from a successful two weeks' deer hunting trip in the vicinity of Penetanguishene.

I. H. Weldon, of Toronto, President of the Provincial Paper Mills Co., and N. L. Martin, of Toronto, secretary of the Canadian Paper Trade Association, have returned from a deer shooting expedition to Hartley Bay in the French river district. There were some fifteen members in the party, of which J. G. Gaudaur, of Atherly, former champion oarsman of the world, was one. The Hartley Bay Hunt Club secured their full complement of deer, which they report as plentiful.

There were shipped on the Temiskaming and Northern Ontario railway during Aug. 10,582 cords of pulpwood, which represents an increase of 1,517 cords, or 16.7 per cent compared with the previous month. During Aug. there were also shipped 5,968 tons of wood pulp and 6,062 tons of paper. The former represents an increase of 2,987 tons or 100 per cent and the latter 127 tons or two per cent as compared with the previous month.

Rev. Walter Cox, rector of Christ Church, Gananoque, Ont., who is a former Grand Master of the Independent Order of Oddfellows in the province of Ontario, will resign his charge at the end of the year and remove to Toronto where he will engage in the publishing line. He has purchased the Dominion Independent Oddfellow, of which paper he will assume the editorship.

The Globe has begun the erection of a large addition to its premises on Yonge Street, Toronto in order to

afford accommodation for the printing department. The extension will cost \$35,000.

The capital stock of the Georgetown Coated Paper Mills, Georgetown, Ont., has been increased from \$100,000 to \$500,000 by the creation of 4,000 shares of new stock of \$100 each. The company is erecting a large extension to their buildings and will install additional equipment. Good progress is being made on construction work.

James A. Cook & Son, Limited, has been incorporated with a capital stock of \$60,000 and headquarters in Toronto to carry on the business of stationers, printers, lithographers, bookbinders, envelope and paper bag manufacturers, etc.

F. J. Niven, who has for some years been in the timber license department of the Ontario Government, has been appointed secretary of the Department of Lands and Forests, and also secretary to the new Minister, Hon. Beniah Bowman. Mr. Niven succeeds C. C. Hele, who, after several years service has resigned and has taken a responsible position with a Toronto financial firm.

Many eastern friends in newspaper and publishing circles have learned with regret of the death of Hon. F. L. Carter-Cotton, of Vancouver, who in 1887 founded the Vancouver News-Advertiser now incorporated with the Vancouver Sun. He retired from journalism in 1910 and was for many years a member of the British Columbia Government.

G. H. Askwith, assistant sales manager of the Riordon Pulp and Paper Co., Montreal, was recently operated upon for appendicitis and is now well on to the road to recovery.

The Riordon Pulp and Paper Co., Montreal, have taken a progressive step and registered a trade mark for their products. A circle encloses a maple leaf with the words "Maple Leaf Bleached Sulphite" in the centre. The name of the firm and the words "Made in Canada" are printed around the inside of the circle.

The paper box factory of Moirs, Limited, chocolate manufacturers of Halifax, which was located at Bedford, N.S., was destroyed by fire recently. The firm will rebuild.

Mlle. Faymonville of Brussels, Belgium, whose brother is in business in that city has been calling upon the paper trade in Toronto in the interest of the export business and has been introduced to a number of leading commercial and manufacturing firms by the Commercial Intelligence Department of the Toronto Board of Trade.

At the annual meeting of the Association of Canadian Advertisers held in Toronto last week, W. C. Betts of Montreal, was elected President; D. G. Clark, of London, vice-president; J. R. Kirkpatrick, of Toronto, treasurer; and Miss Clotworthy, of Toronto, secretary.

James Edgar, who has been postmaster of Peterborough, Ont., for the past eight years, passed away recently at the age of fifty years. Before his appointment to the post office he was engaged in the wholesale paper business in that city for a long time.

McCaskie Systems Limited, Carlaw Ave., Toronto, who have outgrown their present premises, intend removing to Galt where they have secured larger quarters, having bought a large manufacturing plant. They will employ about a hundred hands. The firm manufactures account registers and counter check books.

Newsboys, of Toronto, who enlisted during the war, have on their return found that their newstands on leading corners have been taken up by others who stayed at home and among the occupants are foreigners. Returned representatives have appeared before the Board of Control in Toronto asking that the privilege of erecting news-stands on the city sidewalks be extended to overseas men in preference to others, owing to the difficulties of finding openings in the business. The matter will be looked into.

Hon. T. D. Pattullo, Minister of Lands for the British Columbia government, was in Toronto last week on business and reports that there are splendid prospects of the rapid development of the pulp and paper business on the Coast and that all the mills are rushed with orders.

The Beaver Board Co., of Thorold, Ont., have commenced the construction of an addition to their plant which will cost \$75,000. The G. C. Carswell Construction Co., Limited, of Toronto, have been awarded the contract. The extension will be of steel and mill construction upon a concrete foundation.

General C. H. Mitchell, who is the new Dean of Engineering, as well as an old graduate of the Faculty of Applied Science, University of Toronto, closed his address before the Ontario Section of Mechanical Engineers last week with a description of after-the-war conditions at the University and drew some deductions as to the trend of engineering opportunities in different channels, as indicated by the tendency of certain branches, notably mechanical engineering and engineering chemistry, to push ahead at the present time.

Mr. J. A. Hanrahan of the Gulf Pulp & Paper Company, Clarke City, Que., has been spending a few days in town. Mr. Hanrahan has been combining business with pleasure and previous to visiting Montreal had ten days in New York. He reports that they are very busy down at the mill and are expecting to make two more shipments before their freezing up.

It is reported that the Mattazami Pulp & Paper Co. of Smooth Rock Falls, Ont., will establish its purchasing office in Montreal.

Mr. Chas. W. Mullen, of Bangor, Me., who is the prime mover of the Great Eastern Paper Co. was in Montreal this week. The company's office will probably be opened there in the near future.

#### SMITH PAPER MILLS GETS TIMBER LIMITS.

The Toronto Paper Company, recently acquired by the Howard Smith Paper Mills, Limited has a sulphite mill of 20 tons per day capacity. This is being increased by the new owners to 30 tons per day.

The same interest, it is understood, have also acquired valuable timber limits, with saw-mills, etc., containing over 500,000 cords of pulpwood, or sufficient to supply the company's needs for over 20 years. These valuable acquisitions make the company self-contained.

The capacity of the combined companies is now 154,000 lbs. per day of writing, book and ledger papers.

A dangerous man is one who acts with no thought of consequence to others.

#### BROWN CORPORATION HAD BIG FIRE.

Trois Pistoles, Quebec, Nov. 23.—The disastrous conflagration that broke out at the Brown Corporation's pulp and lumber mills last Thursday afternoon is still smouldering and though there is some slight danger of it spreading large gangs of men are working night and day in endeavour to extinguish it entirely. Aided by the rain which has been falling all afternoon and evening, it is hoped to get it entirely under control soon. Unless it should succeed in reaching the mill or some of the houses, no further damage can ensue as practically all the wood and pulp that could be destroyed is already lost.—Quebec Chronicle.

#### A "MOOSE" STORY.

Three hunters went out in search of game,  
Pounsford, Dumeau and Blueier by name.  
They pitched their camp on the trackless snow  
For you see—they had nowhere to go.

High o'erhead the North Lights swept  
As three brave hunters warily crept,  
Through the forest, deep with gloom  
And filled with the silence of the tomb.

With eyes forever on the ground  
And ears alert for any sound  
With rifles slung across their back  
They followed up a Bull Moose track.

Through thickets dense they followed close  
Every tree, a lookout post;  
Through valleys deep, o'er mountains grim,  
A slushy stream they had to swim.

Across an open plain they go,  
And lose the tracks in the boundless snow.  
They looked around in vain for more—  
But that old Moose had been chased before.

As finally they quit at last  
A monster shadow flitted past,  
And stopped beside the sluggish stream  
A regular old hunter's dream.

"I see him," shouted Pounsford, "There!  
"I'll have that Moose, I do declare."  
Dumeau says "By Gosh, you're right,  
"Just half a mo', to adjust my sights."  
Blueier as quickly followed suit,  
And got his rifle set to shoot.

The three guns sighted and loaded full,  
They fired and killed—a farmer's mule!  
They came up close, their prey to view  
The sight they saw made them feel blue,  
Their eyes just couldn't leave that mule  
Whose head they had with lead pumped full;  
(And still today it makes them sick  
To think of how they fired too quick).

—Machine Room Poet.

Port Arthur, Ont.

November 12, 1919.

Note: The editor is not responsible for these sentiments. The "poem" is given publicity by special request and—well, we are a long way from Toronto and Port Arthur.

We make way for the man who boldly pushes past us.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November 24, 1919.—From present appearances newsprint will soon be as high in price as some grades of book and writing papers,—that is if the purchaser wants spot delivery. In fact, he is lucky to get a supply at any price and a visitor from Baltimore to Toronto during the past week related several instances where jobbers in New York and other cities were offered ten cents a pound for what stocks they had on hand and stated that, on the other side of the line, the existence of several weekly papers was threatened owing to shortage in supplies. Several rural publications in Ontario have been dangerously near getting out of raw material and have sent insistent messages to manufacturers to see that their wants were looked after. Production is being speeded up in all the mills and the larger plants never turned out as much news as they are doing at present. With the Christmas advertising campaign close at hand there will be a greater call than ever during the next few weeks.

In other lines of paper the situation is getting to be nearly as bad and the question is asked, what about prices at the beginning of the new year? Will they go up? Large publishers and consumers of newsprint are being urged to conserve their supplies and, at the meeting of the Canadian Press Association which will be held in Toronto this week, it is expected that some action will be taken in regard to ensuring ample supplies for the coming year and also certain recommendations made with respect to the conservation of raw material generally.

With regard to prices of paper the Victoria Paper and Twine Co. of Toronto and Montreal have sent out a notice to the effect that it is seemingly useless to agitate for lower prices until the world's starved condition is remedied and the productive capacity of the world catches up with the needs of the consumer. "This can never be done" states the company "as long as the present labor unrest exists and the only satisfactory solution of the problem appears to lie in industrial peace and increased production. We urge our friends and customers to eliminate all possible wasteful methods, purchasing only such goods as will

take care of their present needs and those of the immediate future. By all assisting in this, more rapid recovery to a sensible level of trade conditions can be made and the present spasmodic, chaotic and disproportionate conditions will give way to a conservative and sound basis of doing business.

A thorn in the flesh of paper manufacturers is the probable shortage of soft coal. Roughly speaking, it takes a ton of coal to produce a ton of paper and the quantity which some mills have on hand is not reassuring. Receipts of bituminous coal in Canada from the United States have been very small during the past two weeks. Much of that which has been in transit has been commandeered by the federal authorities and the situation has become so serious that, it is rumored, the train service on the railways may have to be cut down in order to conserve supplies. One leading paper firm has inserted a clause in all its literature to the effect "that all agreements and contracts entered into on orders taken are accepted contingent on strikes, accidents, fires or other causes beyond our control, including shortage of coal supply." The latter clause has been added recently. Another that has been incorporated is that all quotations are subject to immediate acceptance.

The production of Canadian newsprint mills during the first ten months of the present year exceeded those of a similar period during 1918 by eight per cent or 45,940 tons and with an almost similar increase across the border, the supply is still about twenty-five per cent shy. The question now arises, will the newspapers combine to curtail consumption and would advertisers give help by assenting to restrictions in space? If some move like this is not undertaken what will the future bring forth? Then there is a growing shortage of groundwood pulp and prices remain very high. Sulphite pulp is also in strong demand, particularly bleached. All paper box factories are rushed; book and writing mills have all the business they can attend to for months ahead. Wrapping papers of all kinds are getting scarcer all the while and stocks with the jobbers lower. Demand keeps away ahead of production and the shortage is each week accentuated. Business with wholesale paper houses is now very lively and November has proved a record

## Scandinavian American Trading Co.

50 E. 42nd STREET

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8312 MURRAY HILL,  
8313

NEW YORK

Write us when  
you have any  
surplus of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

breaker with many of them in the volume of turnover.

Coated paper plants report that business keeps up remarkably well and toilet and tissue mills have all the orders they can look after for months ahead. Specialty mills are turning down business owing to lack of facilities for meeting requirements and other departments of production have the same story to relate.

In the rag and paper stock line, the market for waste paper is generally weak and the mills are holding off from buying, so dealers report. A fairly good demand has set in for No. 1, soft white shavings and white blanks but all other lines are characterized by the marking of time which may not change until after the holiday season. No. 1 shirt cuttings are in active requisition but other grades are not so strong. The American market looks better and an increased call is expected from Canadian mills in the near future. There is a scarcity of supplies in many kinds of cuttings owing to the tendency to utilize all waste wherever possible.

The Saguenay Pulp and Power Co., which controls the Chicoutimi Pulp Co., the largest producer of wood pulp in the world, the St. Lawrence Pulp and Lumber Corporation, the Saguenay Light and Power Co., the Roberval-Saguenay Railway Company and the Chicoutimi Port Co., have placed on the market \$1,500,000 serial gold bonds bearing interest at six and a half per cent. Hon. F. L. Beique, President of the Company, states that the output of the mills at Chicoutimi and Val-Jalbert has been maintained at full capacity since the first of the year. The stocks of mechanical pulp, which had grown to over 60,000 tons in the early months of 1919, have all been sold and shipped and steadily higher prices have been secured for it as well as for the entire output since that time. The pulp, which the company sold last year and during the first six months of 1919, brought from \$26 to \$29 per ton, and has now advanced to over \$40. The last sales were made at \$42.50 per ton. In regard to the chemical pulp operations of the company at Chandler, many improvements have been carried out and the output has been augmented by 40 tons a day, and now amounts to 112 tons and, at the same time, operating costs have been reduced by over \$10 per ton.

**Pulp Prices.**

	F.O.B. Mill
Groundwood pulp	\$43.00 to \$45.00
Sulphite, news grade	\$75.00 to \$80.00
Sulphite, easy bleaching	\$92.00 to \$95.00
Sulphite, bleached	\$115.00 to \$120.00
Sulphate	\$87.50

**Rag and Paper Stock Prices.**

	F.O.B. Toronto
No. 1 white envelope cuttings	\$4.75
No. 1 soft white shavings	\$4.25
White blanks	\$1.75
Heavy Ledger Stock	\$2.65
No. 1 magazine	\$2.10
No. 1 book stock	\$1.65
No. 1 manilas	\$2.30
No. 1 print manila	\$1.55
Folded news	\$1.10
Over issue, news	\$1.20
Kraft	\$3.50
No. 1 clean mixed papers	.90e
No. 1 shirt cuttings	14½c to 15c
No. 1 unbleached cotton cuttings	13-13½c
No. 1 fancy shirt cuttings	11c
No. 1 blue overall cuttings	11c

Bleached shoe clip	12c
White cotton hosiery cuttings	13½c
Light colored hosiery cuttings	11c
New light flannellette cuttings	10½c
No. 2 white shirt cuttings	11c
City thirds and blues (repacked), No. 1	4½c
Flock and satinettes	\$2.70
Tailor rags	\$2.80
Gunny bagging	35½c to 4c
Manila rope	1.6c

**NEW YORK MARKETS**

New York, November 22. So many changes in paper prices are occurring these days that it is difficult to say at the close of each week just what has proven the feature of the market for the few preceding days. Standing out prominently above all other developments during the past several weeks has been the strength displayed by newsprint paper, the steady advance in prices, on which has apparently not yet been checked. Sales of spot lots of newsprint in rolls have been made this week at 8 cents a pound, probably a record-breaking figure for many years. Even at this price, buyers have met with untold difficulty in locating available supplies of print paper, and the great bulk of demand from transient sources has remained unfulfilled. The situation in newsprint has reached that stage where it requires the ability of a fortune-teller to say what is going to happen. The potential requirements of the country at large are of such magnitude that there seems no question that manufacturers will fall far short of filling them. Newspaper publishers throughout the States have been operating at a rate during the past few months where it was only a matter of time when all reserve stocks would be totally obliterated and where mills simply would not be able to cope with the needs of consumers. That time evidently has arrived and consumers are paying the penalty in the form of high prices for their reckless consumption when they had reserve supplies to draw on.

Naturally the only solution of the situation is either a prompt reduction in the volume of consumption or a quick increase in the production of paper. As it takes time for manufacturers to broaden the scope of their operations through the installation of new acquisition of raw material, publishers have come to the realization that it behooves them to take the only means possible to relieve the market by cutting down their consumption of paper to a level more in keeping with the production of mills, and are wisely following this procedure. In nearly every daily newspaper one runs across at present can be found in some prominent position a notice to the effect that "such and such number of columns of advertising have necessarily been omitted from this issue because of the shortage of print paper." While the adoption of this policy is expected to relieve the market situation to a degree where demand for newsprint probably will ease up, there is scant likelihood that consumption will fall to a sufficient extent to have material influence on market prices on paper. It is a foregone conclusion that every newspaper publisher is not going to refuse to carry advertisements if there is a possibility of securing the necessary paper on which to print them. The reduction in the size of daily papers has become imperative because publishers with very few exceptions have sunk into their reserve stocks to such a depth that they are at a loss to fathom where they are to acquire sufficient supply to keep them running even on a normal scale during the next few

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

months. And that the prevailing tight condition of the market will exist for some time to come seems assured by the fact that numerous consumers have contracted for newsprint at present high prices for delivery as far ahead as a year.

Prices on book papers are gradually strengthening. In view of the situation in the printing industry in the East, which is still more or less handicapped by labor troubles, this is surprising, and some are led to believe that the rising market for newsprint is at the bottom of the advance in book paper prices. Doubtless there have been a good many fresh orders for book papers placed with mills by consumers who have found it necessary to move the scene of their operations temporarily, but on the other hand, it is quite likely that a considerable number of orders have also been cancelled, and with one offsetting the other, it is questionable whether aggregate demand has increased recently to any material extent.

Coarse papers continue in a firm position and are moving in consistent fashion. Mills in general are sold up for some time and are reluctant to enter into additional engagements. Tissues are quotably firm and in good demand. Fine papers are sought in gradually increasing volume and manufacturers are operating their plants at as large capacity as prevailing labor conditions will permit. The board market is firm and active. Prices are more or less stationary but there are no signs of easiness in any quarter.

**GROUNDWOOD**—According to talk in the trade, sales of spot lots of spruce groundwood have been made at as high as \$60 per ton at grinding plants. Demand shows no abatement and the great bulk of it is going unfilled owing to the inability of manufacturers to supply all the pulp wanted. Consumers who ordinarily cover their forward requirements by contract purchase and transient buyers alike are eagerly seeking pulp and are freely meeting the figures asked which lends support to the reports that No. 1 groundwood for prompt delivery has fetched up to \$60 despite the contention of many members of the trade that the actual market value of mechanical pulp is still around \$50. So few offerings are made that it is difficult to obtain a definite line on prices, most of the quotations named being purely of a nominal character.

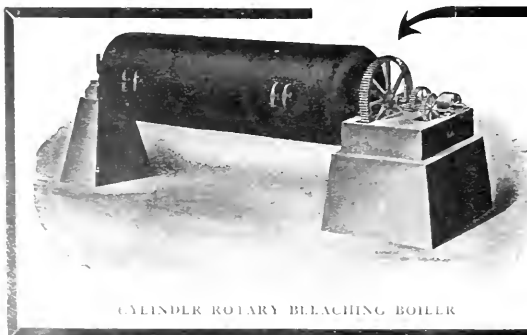
**CHEMICAL PULP**—Late advices from Scandinavia say that the upper portion of the Baltic has frozen and that navigation in the lower regions is daily becoming more difficult. Mills in Sweden are reported sold up for some months and to be naming high prices on such amounts of pulp as they have to dispose of during the next few months. Importers here lay stress

on the increasing difficulty in securing sulphite in sizable quantities in Sweden and assert that indications point to a shortage of Scandinavian pulps for a long time to come. Domestic sulphite of all grades is moving actively and at firm prices. Unbleached pulp of newsprint quality finds a ready sale and the occasional offerings of domestic bleached sulphite are promptly snapped up, while easy bleaching sulphite is in pointed demand and is available in amounts far too small to satisfy the wants of buyers. There is not relatively the firmness characterizing quotations on soda and kraft pulps as is evident in sulphites, yet consumers are absorbing these grades in a consistent manner and prices are maintained.

**RAGS**—The rag market displays a decidedly firmer undertone and business along certain lines is broadening. New cuttings of practically every description are sought by mills in larger volume and dealers are moving up prices and seem to be getting the higher figures without trouble. Old white rags also are in a livelier position and roofing rags continue to move in good volume. In the face of these developments in the domestic market, rags from Europe are coming in in large quantities, which would indicate that paper manufacturers are switching an appreciable portion of their buying from foreign to domestic stock. Taking all the talk regarding the poor quality of European rags at present heard in the trade, this doubtless is the case. Sales reported include No. 1 white shirt cuttings at 15.50 cents delivered mills, No. 1 washables at 9.50 cents, light silesias at 11 cents, No. 1 old repacked whites at 8.50 cents, repacked thirds and blues at 4.25 cents and black stockings at 3.25 cents. Roofing rags are firmly quoted at a basis of around 2.75 cents for No. 1 packing at shipping points, with independent mills reported frequently granting slightly higher figures.

#### MILITARY MATERIAL FOR CAMPS AND STORES.

There is to be a sale of military stores, including dry goods, hospital furniture, bedding, hardware, leather goods, junk, etc. Sales will be made by sealed tender. Persons desiring to tender are requested to register their names and addresses with the Secretary of the War Purchasing Commission, Booth Building, Ottawa, stating the class of goods in which they are interested, whether new or second-hand, or both. Tender forms with full details of the goods and places at which samples may be seen, will be mailed when ready to those who have registered as requested above. Pulp and paper mills, especially those operating stores or camps, should be interested in this announcement.



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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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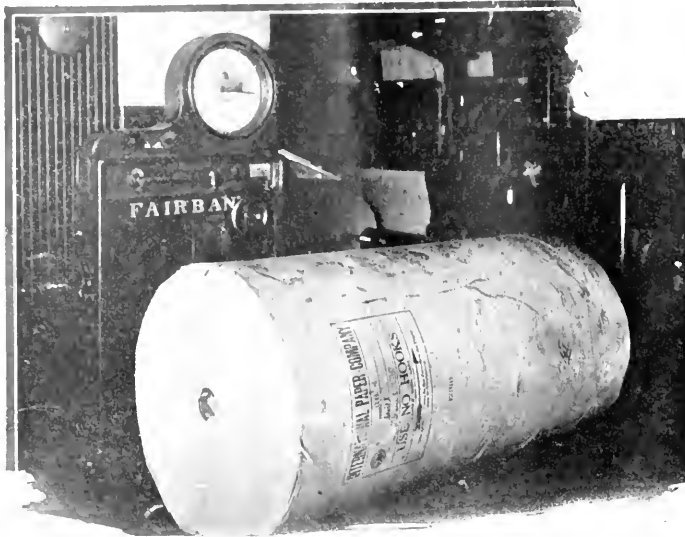
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*Weighing standard roll  
of news print paper on  
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# FAIRBANKS Dial Scales

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# EDITORIAL

## *ANOTHER SOURCE OF SULPHUR.*

For some time there have been occasional suggestions, more or less practical, for the utilization of the vast amount of sulphur dioxide which is annually wasted in connection with the use of the sulphide ores of Ontario. A method of utilization of this gas which gives every promise of success is reported to be in operation in connection with the Tacoma Smelter in Washington. The sulphur dioxide is liquified and since in this condition it is quite readily separated from air and other gases it can be placed in suitable containers and shipped to sulphite mills within reasonable distance.

The only places so far considered as a source of sulphur dioxide gas from Canadian mills that until last week had come to our attention were the operations in the Sudbury district of Ontario. The mills which are likely to find it most convenient to use liquid sulphur dioxide are those of the Spanish River Pulp & Paper Mills, Limited, although it is possible that other Canadian plants may find it possible to do so. Within a fairly short and direct shipping distance of Sudbury we find the three mills of the Spanish River Company, the three sulphite mills in the Niagara district, the new Kipawa Fibre Company at Teniskaming and possibly even the Abitibi and Mattagami Mills near Cochrane.

It was our pleasure a short time ago to hear a paper read at a meeting of the Montreal section of the Society of Chemical Industry on the "Zinc and Lead Deposits of Gaspesia." It appears that there is a particularly rich deposit of blende and galena in a vein which has outcrops almost in the centre of the Gaspé Peninsula. If these ores are transported to some point on the Baie des Chaleurs to the south to be smelted there would be available for cheap transport a considerable amount of sulphur dioxide gas. From an operation handling 100 tons of lead per day we should have available about ten tons of sulphur dioxide or the equivalent of about five tons of sulphur. If this were depended on as the entire sulphur supply for a pulp mill it can be seen that at ordinary rates of consumption such an amount would satisfy a mill making only about 20 tons of pulp, but if used simply for strengthening the acid in a sulphite plant it is impossible to predict how large a plant could be served because of lack of information on the amount of strengthening that would be possible or necessary.

These points are mentioned because in the discussion of the paper it was suggested that the sulphite industry would furnish a market for a by-product of the mines in the manner indicated. No doubt the development of these deposits will in time make larger amounts of sulphur available in the form of liquid sulphur dioxide,

and if the smelters are located on tide water there are a number of mills which can very easily be reached by transporting the gas in tanks loaded on scows. In the immediate vicinity there is the mill a Chandler and it would not be a very serious matter to tow the scows to Bathurst and Chatham and they might even be moved up the Saguenay to Ha! Ha! Bay and Chicoutimi. If tank cars were used it would then be possible to reach the Nashwaak mill at St. John, N.B., the Fraser mill at Edmunston and many others in Eastern Canada. It is likely to be some time before such an extensive market will be served, but it is interesting to consider possibilities.

---

## *THE BOOK PAPER SITUATION.*

A question has come in regarding the probable trend of the book paper situation in view of the present condition in the newsprint market. It is impossible to make a definite prediction so that we hesitate even to offer advice on the subject, but if our thoughts can be of any service we are glad to pass them on for what they are worth.

It is our opinion that the book paper situation will bring a good many worries, but is not likely to become as serious as that of newsprint. And we further believe that the newsprint situation is not likely to get much more serious than it is at present unless coal supplies are entirely cut off, although the market will undoubtedly remain exceedingly tight for at least six months, and the most careful conservation of available supplies will be necessary in order to enable everybody to have absolutely necessary amounts of paper. The distribution of available supplies will have to be very carefully carried out, and it will not surprise us if the distribution of newsprint becomes the most important function of the Paper Controller.

Associated with the newsprint situation is the market for groundwood and as the supply of this material is so dependent on fluctuations in water power the available amounts have recently become quite limited. The shortage of ground wood for newsprint on this continent has also been seriously affected by the large increase in shipments to Great Britain from sources which, during the war, supplied a considerable amount to Canadian and American newsprint mills. A revival of interest in box-boards is further restricting the supplies of ground wood. There is likely, however, to be some relief in the matter during the coming year through new production if, in the meantime, consumers are willing to restrict their demands to the lowest possible amount. Furthermore, it is not unlikely that the

present wave of advertising will die out somewhat and newspaper sizes come back more nearly to normal.

The situation in book papers appears to us somewhat different and as some of our readers may have better advice on the subject we should be glad to have them express their views. In the first place it seems that while magazine advertising has increased considerably, the increase is by no means as great nor has it been as rapid as in the case of newspapers. There has been some increases in the capacity of sulphite mills, at least in Canada, recently, and there will be still further supplies shortly available, although the market is tightening now, and production is approaching the capacity of the mills.

Most magazine papers are made with a basis of wood pulp, although some contain considerable amount of waste papers. Of course, the larger the amount of paper consumed, the larger the amount available in the form of waste, although the percentage returned to the industry is likely to decrease as the consumption of paper by publications increases. The wood fibre principally used is chemical pulp and this is not much affected by water conditions, although the production may be very seriously interfered with if the coal situation is not soon remedied. The third principal ingredient of book papers is china clay and the supply of this material is dependent principally on transportation facilities. One feature of the use of chemical pulp that is encouraging is the fact that when a pinch comes it is possible to crowd the digesters a little and so increase production to meet any important increase in demand, considering, however, that the quality of the paper would necessarily suffer from such a move.

It is probable that there will be some pinch experienced by magazines using the cheaper grades of paper containing ground wood, because of the general effect of the newsprint situation and this may extend somewhat to the higher grades of book papers. Considering such factors as we are able to estimate it looks as though magazines would have enough paper to meet their winter's requirements if supplies are used carefully, and if there are not very many new publications started. The suspension of publication for some time by a number of the New York publications will doubtless tend to relieve the market for a time, but it is likely that this loss will eventually be made up and the demand increased accordingly. Productive capacity in book mills has not been increased very much, and some machines may even be put on other grades, so that magazines will do well to keep as small as possible and cut out every ounce of waste.

---

#### CANADIAN SAFETY CALENDAR.

The National Safety Council which operates from Chicago and has been doing some exceedingly important work in reducing accidents throughout the United States and in many Canadian plants has found a very effective instrument in the form of its annual Safety

Calendar. Last year an appropriate series of cartoons represented various personages connected with the German forces as learning the principles of Safety First through sad experience. This year a number of more homely topics form the basis of the cartoons.

Without in any way attempting to reflect on, or interfere with the good work which the National Safety Council Calendar will accomplish, the Ontario Pulp & Paper Makers' Safety Association in its campaign for reducing industrial accidents has produced an all-Canadian calendar. We have been favored with an advanced proof of the cartoons and we must confess our surprise at finding that such an excellent piece of work has been accomplished as a first attempt. We trust that a number of these will be placed in every pulp and paper mill in Canada, not only for the message they will bring but also for the effect that they will have in unifying the Safety First movement throughout the Dominion. Because of the need of creating more interest in the Safety Movement in the homes a very suitable gift to each employee would be a Canadian Safety Calendar for Christmas. The cost is only 30 cents each for 100 copies or less, and 25 cents each for more than 100. For orders of 250 or more, the safety slogans will be printed in both French and English, if desired.

The calendar is all-Canadian—ideas, drawings, paper, and printing.

---

#### CHAS. F. HAMLYN, SUCCESSOR TO G. B. VAN BLARICOM.

Three, perhaps four, generations of editors of the Pulp and Paper Magazine have enjoyed the cheerful service and hearty assistance of George B. Van Blaricom, as representative and reporter in Toronto. Our friends tell us that Van, as he is generally known, though a frequent, was always a welcome visitor, and that he could be depended on to get things straight. But Van has a bigger job, and as Editor of the Canada Lumberman has found it difficult to do the extra work. The publishers of the Pulp and Paper Magazine have established a member of the editorial staff in Toronto, so Mr. Van Blaricom is handing the reins, or should we say the lines, over to Mr. Chas. F. Hamlyn. We trust he will receive the co-operation and the welcome of those in the industry with whom he comes in contact, so that his work may be a real service to the industry.

---

#### COBWEBS.

The Toronto "World" says in a headline, "The Canadian Press Association Bears Triplets." It might be observed that Caesar anticipated the outcome of the recent C.P.A. meeting when he wrote, "'Gall' is divided into three parts."

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The index for the Pulp and Paper Magazine, 1918, Vol. XVII, may be had on application.

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Count Bentinck was certainly in luck to have Bill Hohenzollern cut up his winter fuel.

# Compressed Air in the Pulp and Paper Industry

## PART I—HOISTING WITH COMPRESSED AIR

By F. A. McLEAN, Canadian Ingersoll-Rand Co.

Compressed air in the mine, machine shop and foundry, has been so thoroughly and successfully applied that no one engaged in these industries would think of trying to operate their plants without its help.

The use of compressed air in the pulp and paper industry might be said, however, to be only in its infancy or in the experimental stage of development, some of the mills having installed compressed air equipment only as a sort of last resort and then with perhaps a rather dubious view of its ultimate value to them.

That compressed air has not been more widely used in the paper mill may be due to the prejudice which exists in many sections against trying out new methods of doing things which are apparently being done well enough at present, and to the fact that the advocates of compressed air have been so busy working out the various problems in the transmission and use of compressed air in other industries that they have had little time or inclination to study all of its possible applications in the pulp and paper industry.

With the modern trend of scientific management in the paper mill and many other industries has come a demand for any device or method which would reduce manufacturing costs and increase production; and this has led many of the more progressive manufacturers of paper to investigate some of the many possible applications of compressed air, with the result that compressed air is coming into much wider use in this industry than has been the case in the past, and undoubtedly it may be predicted that the day is not far distant when every mill will have its compressed air piping system which will be considered equally as important as the steam and water pipes now in use.

In an article in *The Paper Industry* some time ago, Mr. C. J. Billingham enumerated over two dozen different uses for compressed air in the paper mill, which covered ventilating and blowing systems, coal and ash handling systems, dust collection, cooling and absorption systems, hoisting and pumping with compressed air and many other applications, a proper description of which would fill a good sized book.

To cover all of the possible applications of compressed air in the paper mill in a magazine article or even a series of articles of moderate length is manifestly impossible, and it is intended herein to consider only a few of the better known of its many possible applications which are long past the experimental stage.

### Hoisting With Compressed Air.

Every time an employee of an industrial organization calls a fellow workman to assist him in lifting or handling material, their employer is losing money. Chain blocks, while of considerable assistance in reducing this waste, are not wholly desirable, as no matter how easy it may be to raise and transport a load through their use, they depend on human energy for their power and as the day progresses the workman through fatigue will not be able to maintain the same working speed that he was capable of at the beginning, and there is always the liability of the man injuring himself by trying to raise too heavy a load.

The use of a power operated hoist enables the workman to maintain the same speed throughout the day, and the matter then rests on the selection of the hoist best adapted for the work to be done. In the selection of hoisting equipment the question of power economy should be an important consideration and from this standpoint alone the air hoist deserves attention. As an example we may consider a plant in which there are ten 1 ton air hoists in use. If each hoist throughout the plant is used six times an hour or an average of one air lift a minute for the plant, the air consumption would be about  $7\frac{1}{2}$  cubic feet per minute at a cost of 00.28 of a cent or approximately 20 cents for an entire day, if one hoist was in use all the time.

Due to the fact that compressed air may be readily stored, it is more economical than electricity, as a four ton electric hoist will draw at once whatever current may be necessary to lift the four tons, requiring a source of supply of considerable capacity, and while a four ton air hoist will consume the same amount of power to lift its load, it may be taken from an air receiver where it has been accumulated gradually from a comparatively small compressor unit.

### Air Hoists.

Pneumatic hoists may be divided into two general classes, the direct acting or straight lift type in which the load is raised by the air under pressure acting directly on a piston rod and hook to which the load is attached, and the rotary geared motor driven types in which a number of reciprocating cylinders and pistons or an engine of the square piston or Dake type is used to transmit a rotary motion to the hoisting drum. Hoists of the motor driven types are capable of much longer lifts than the straight lift type.

### Straight Lift Air Hoists.

The straight lift air hoist is probably the simplest and cheapest type of power hoist obtainable, consisting essentially of a cylinder containing a single acting piston and rod which passes through a stuffing box in the lower cylinder head and terminates in a hook to which the load is attached. The valve which controls the admission of air to the under side of the piston is operated by a double ended lever to which pendant cords or chains are attached.

In the earlier forms of direct lift hoist, dirt and moisture were some times drawn into the upper part of the cylinder from the atmosphere by the suction created by the down stroke of the piston, thus limiting the usefulness of the hoist in dusty places or where the air was laden with chemical fumes.

To overcome this trouble, the Canadian Ingersoll-Rand Company, brought out what are known as their class A, and B, hoists.

In the class A, or single acting type, the exhaust air passes from the lower to the upper part of the cylinder and live air is used only on the lifting stroke. To raise the hook, the admission valve is opened and the air passes from the receiver to the lower part of the cylinder, raising the piston. When the load has reached the desired height the cord is released, the admission valve closes, and the load remains stationary. To lower the load, the exhaust valve is opened by pulling

the other cord which allows the air to pass from the lower part of the cylinder through the exhaust valve into the upper part of the cylinder.

As the air is thus exhausted to the upper part of the cylinder, the piston and load descend by their own weight. On the next upward stroke the air above the piston is exhausted into the atmosphere. This style of hoist is suitable for use in places where a quick acting type is required, such as in lifting rolls of paper, handling timber, and in stores and shipping rooms for handling supplies and finished products.

The class B or Air Balanced Hoist differs from the single acting type principally in the construction of the valve mechanism which is similar with the exception of a third cylinder which acts as a check valve and hold the load from falling in case the hose becomes detached, bursts, or if for any other reason the air pressure is suddenly cut off. In this type the lower part of the cylinder is always open to the air pressure which passes through the check valve before entering

opened. The steadiness and accuracy of control of this hoist make it suitable for use in such work as may be handled by the single acting type, and, in addition, it may be used in placing parts of machinery, in erecting and repair work, etc., as the load may be raised or lowered a fraction of an inch at a time thus allowing it to be placed with precision as there is no fluctuation of the piston.

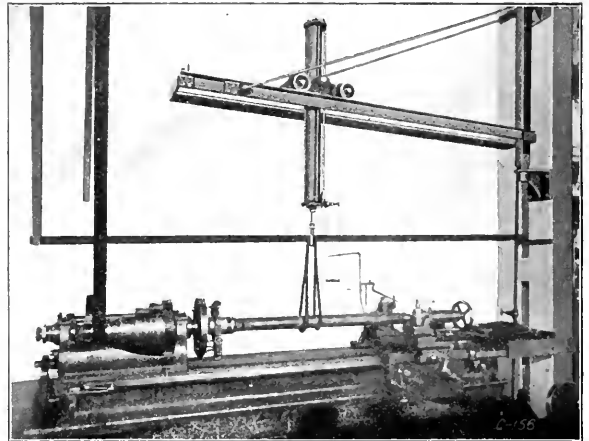
A unique check valve used on this hoist allows the load to be raised, after which the hose may be disconnected and the hoist moved rapidly on a trolley to another part of the mill and the load lowered into the place desired, without the slightest lowering of the load during transit. The valve is easily adjusted and affords a wide range of speeds.

As no air is drawn in from the outside in either the class A or B hoist during operation, there is no chance for moisture or dust to enter and their use is permissible in places where dust or strong chemical fumes abound which would prohibit the use of the old fashioned type.

Obviously the capacity of a given hoist will depend on the air pressure on which it is operated and the



Jib Crane mounted on outside wall of building for loading and unloading material



Air operated Jib Crane serving machine tools in the repair shop.

the cylinder. To lower the hook the air is admitted to the upper part of the cylinder, balancing the air pressure in the lower part of the cylinder and allowing the piston and load to fall by their own weight with the assistance of the unbalanced pressure on the upper part of the piston. To raise the hook the air in the upper part of the cylinder is allowed to exhaust into the atmosphere, and the piston is raised by the air pressure below.

Any possible leakage which may occur around the piston will have no effect on the height of the load as it will be automatically compensated for by the air in the receiver. The pressure above and below the piston keeps the load absolutely steady, there being no sudden movement, or jerking of the piston, and the load is lowered quickly, owing to the unbalanced pressure on the piston, when the exhaust valve is

following table shows the lifting capacity of the seven standard sizes of class A and B hoists at various air pressures:

Diam. in inches	For Shortest Length over all Add to Lift Ft. Inch.	Lifting Capacity in Pounds At Air Pressures of		
		60 lbs.	80 lbs.	100 lbs.
3	1— 2	360	480	600
4	1— 3	640	850	1070
5	1— 5	1000	1360	1670
6	1— 6	1450	1920	2400
8	1— 5½	2560	3400	4300
10	1— 8½	4000	5350	6700
12	1— 11½	5750	7700	9600

A disadvantage of the direct lift hoist is the head room required and to overcome this difficulty and render it possible to secure the benefit of the economies offered by this type of hoist, it is often possible to place the cylinder in a horizontal position, and use a rope or chain to get a vertical lift, as shown in the accompanying illustration.

When used in this way it is possible to secure a double lift without increasing the length of the piston stroke. A double acting type must be used, however, in order to force the piston back to the head of the cylinder when there is no load on the hoist, but as the pressure required to do this is slight, there will be very little strain on the stuffing box.

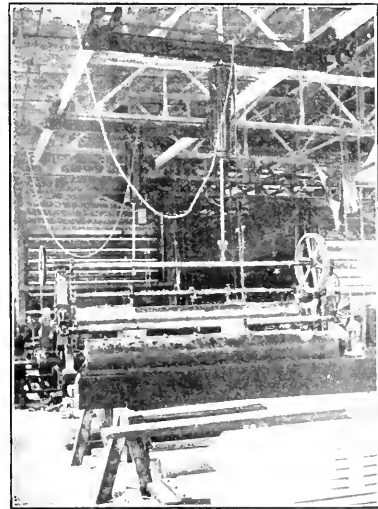
These horizontal hoists are usually special arrangements designed by manufacturers of compressed air appliances to best suit the conditions of head room, etc., which are peculiar to a given installation.

The mobility of the straight lift air hoist is somewhat limited by the length of its hose. Small electric hoists which do not employ trolley wires have a limited range of movement also, and depend on flexible cords for their connection to the power supply. On air operated travelling cranes and other places where a moderately long hose is necessary, hose travellers or carriers are used. These consist of rings attached to the hose every 10 or 12 feet and arranged to slide on an iron rod. As the hoist is moved inward the hose hangs in loops which prevent it from dragging on the floor. For longer runs it will usually be found better to use quick acting couplings which will permit the hose to be disconnected and the lead to run to the desired place, where another short hose can be quickly connected and the hoist refilled with air. For use on trolleys of moderate length and where the lifts are short and frequent the straight lift air hoist has no equal and will readily save its first cost in a very short time. Air hoists also eliminate all danger of fire or shocks to the workman which sometimes occur even with properly designed electrical hoisting equipment.

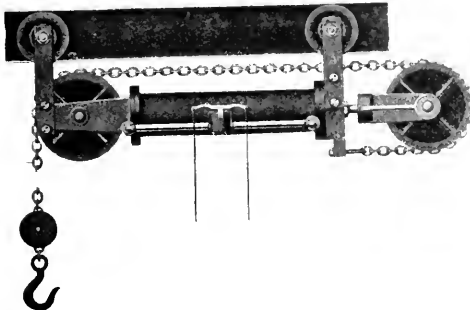
One of the first mills in Canada to adopt the air hoist was the Lake Superior Pulp and Paper Company who several years ago installed a compressor and

**Table of Hoisting Costs.**

Diam. of Cyl.	Effective Area of Piston	Maximum Weight Lifted	Cu. Ft. of Free Air per 4-ft. Lift	Cost of Air per Lift	Cost of Air per 100 Lifts
3	6.87	.618	1.67	\$.000084	\$.0084
4	12.22	1.099	2.97	.000149	.0149
5	19.09	1.718	4.64	.000232	.0232
6	27.49	2.444	6.68	.000334	.0334
7	37.42	3.367	9.09	.000455	.0455
8	48.87	4.398	11.88	.000594	.0594
9	61.85	5.566	15.03	.000752	.0752
10	76.36	6.872	18.56	.000928	.0928
11	92.39	8.315	22.46	.001123	.1123
12	109.96	9.896	26.73	.001337	.1337



**Direct Lift Air Hoists suspended from travelling trolleys over paper machine in the mill of the Brompton Pulp and Paper Co., East Angus, Quebec.**



**Horizontal thrust air hoist for use where the head room is limited or where a long lift is desired.**

about a dozen straight lift air hoists. The illustration shows two straight lift air hoists in operation on a paper machine in the mill of the Brompton Pulp and Paper Company at East Angus, Quebec.

In commenting on the cost of hoisting with compressed air, Mr. Frank Richards, managing editor of *Compressed Air Magazine*, estimates that at a gauge pressure of 100 pounds, compressed air costs about 5 cents per 1,000 cubic feet of free air, and basing his determinations on this, the rated lifting capacity of various sized hoists, their free air consumption per four foot lift at 90 pounds pressure and providing a margin of 30 per cent to cover such contingencies as taking up the slack in the rope, the means of attaching the load, etc., he has compiled the following table of costs per 4 foot lift and per 100 4-foot lifts:

**The Imperial Type Motor Air Hoist.**

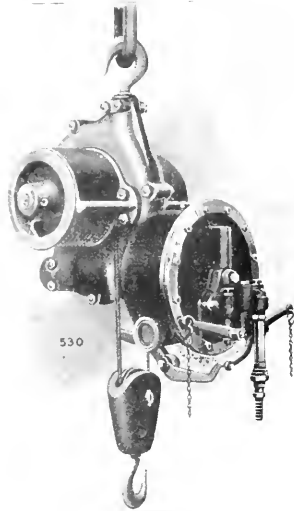
The direct lift hoist, since it is the simplest and earliest type of air hoist developed, is more widely used than the improved motor driven type, although the latter was designed to improve some of the features of the former.

The power unit in this hoist is a small three-cylinder reciprocating engine or motor similar in design to those used on the earlier types of pneumatic drills and reamers. The crank remains stationary and the cylinders revolve around it on a somewhat similar principle to that of the well known Gnome and Le Rhone engines which have proved so successful in the development of the modern aeroplane.

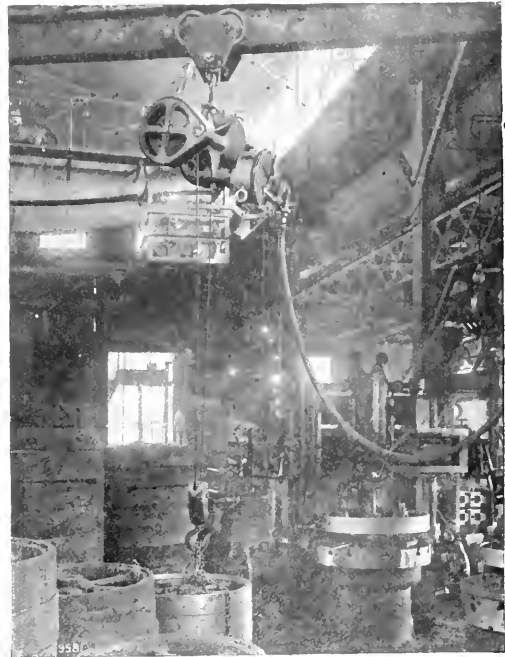
The air admission and exhaust is controlled by ports in the stationary crank shaft, thereby eliminating valves and their necessary gearing. The motor is geared to the hoisting drum in the small sizes by means of a worm and worm wheel; and by the addition of spur gears in the larger sizes. This method of construction does away with the necessity for brakes to hold the load steadily in any position. The valve is so arranged that it will close automatically when the pendant operating cords are released, and being of the reversing type, it readily allows the motor to be run in either direction. An automatic stop is provided which closes the valve when the load has been raised

to the maximum height, and prevents the hook from being run up too far, should the operator forget to release the valve cord, which sometimes occurred in the earlier types of hoists with more or less disastrous results.

The three radial cylinders used in this motor are cast in one piece and revolve about the crank. They are provided with a tapered bronze bushing which is adjusted for wear by simply driving on its larger end. As the thrust of the pistons is always outward and pressure is always exerted between the pistons and the cylinder heads, the cylinders are forced to a tight seat on the crank and leakage of live air is practically impossible, which with the exceptionally short ports used reduces the air consumption to a minimum. This hoist is provided with phosphor bronze bearings throughout and lubrication is provided for by partially filling the motor casing with oil which is flooded over all of the working parts when the hoist is in operation. As the hoist is provided with an outside exhaust, and there is no air pressure in the casing, there is no



Imperial Type Motor Hoist.



Imperial Motor Hoist suspended from a trolley serving machine tools.

#### Imperial Motor Hoists.

Size No.	Cap. in Lbs.	Fl. Lift per Pos. Pressure	Max. Lift Feet.	Size & Length Wire Rope in ft. & ins.	Size Motor	Cu. ft. Free Air per Min	Net lbs.	Size of hose Connection
1	1000	32	20	1 1/4" x 42' 10"	4	45	270	3/4"
2	2000	16	20	1 1/4" x 42' 10"	4	45	270	3/4"
4	4000	8	20	5 16" x 42' 10"	4	45	395	3/4"
7	7000	5	20	3 3/8" x 96' 6"	10	80	785	3/4"
10	10000	3	20	3 3/8" x 96' 6"	10	80	785	3/4"

(To be concluded.)

tendency for oil to be blown or forced from the casing, drying off the bearings and shortening the life of the hoist.

A swivel hook which turns on ball bearings allows the load to be turned in any direction without twisting the hoisting ropes, and to remain in the desired position without swinging back, which is of value when delicate adjustments of the load are desirable.

One of the principal advantages of this type of hoist is its steadiness in operation and its absolute freedom from vibration, made possible by the balanced motor which, with the worm gear drive, transmits a steady motion to the hoisting drum, resulting in a steady uniform lift with no jerks, jars, or vibration. These hoists are obtainable in five sizes, as shown in the adjoining table.

The makers of the "Imperial" Motor Hoist also market a stationary air motor of the same general construction which may be used to "powerize" existing hand operated hoists and cranes, or drive any machinery requiring power within its capacity.

#### ABITIBI TEACHING PAPER MILL OPERATION

An interesting course of lectures will soon be under way at Abitibi Power and Paper Co.'s mill.

The course which is to be given to start with will cover the industry in a general way from the preparation of the ground for the planting of a tree to the operation of the finished paper on the printing press.

Where possible the lectures will be accompanied by lantern slides and operating charts. After each talk an opportunity will be given to discuss the subject by all those interested.

When the preliminary course has been completed classes will be formed, particularly for the men in the mill, which will specialize in the different branches of the operation.

The Committee at present is made up of Messrs. R. W. Sterns, R. W. Hovey, and H. J. Buncke.

# Destruction of Wood Pulp by Fungi

By Otto Kress, C. J. Humphrey, C. Audrey Richards.

(Concluded from last issue.)

**Decay and Molding of Wood and Groundwood Pulp.** In an article on the "Factors Influencing the Value of Pulpwood," Wells,\* points out very clearly that the production of groundwood pulp at any mill would be greatly increased if sound green wood were to be used instead of logs which have been stored in the yards for a period of one to three years. Under present conditions of storage there is considerable loss in using old wood, due to the action of wood-destroying fungi and the work of burrowing insects in the stock. Nor does this loss stop when the wood is converted into pulp, as any fungus infection present will continue to develop when the pulp is placed in storage, and it is probable that here the greater losses occur mainly through the ravages of molds and wood-destroying fungi.

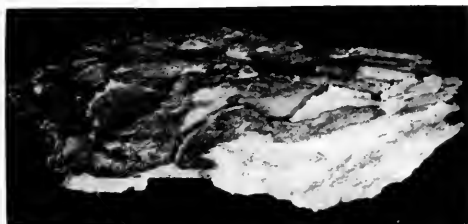


Fig. IV.

*A single lap of Pulp showing Deterioration due to a Wood-destroying Fungus.*

The deterioration of pulp is due principally to two classes of fungi, namely, the wood-destroying fungi and the molds. In either class there may be a considerable number of different kinds, separable botanically, but we are not here concerned with the slightly varying action of individual species but with the groups collectively. The two principal classes, however, should be kept clearly in mind when discussing their action on pulp.

The wood-destroying forms are undoubtedly the more important in reducing the yields and physical properties of the pulp and paper into which such stock is converted. These organisms represent the "higher fungi," so-called because of their more complex cycle. In the complete life cycle we distinguish between the vegetative, or growing, stage and the fruiting stage. The first stage consists of fine interwoven cotton-like threads, termed mycelium, which is very often white, but varies from yellow to brown, as in the "red-rust." These threads permeate the pulp and have the power of dissolving the wood fibre and eventually reducing it to a friable, or crumbly, mass which may present a bleached or a browned appearance, depending on the organism present and the residues it leaves behind.

The fruiting stage of wood-destroying fungi is rarely seen in pulp but if infected laps were exposed to the right conditions of air, and in some cases light, fruiting bodies of definite form would develop on the exposed surfaces. These fruiting-bodies are what we

have in mind when we speak of mushrooms, toadstools, conchs, brackets, etc., and are formed for the sole purpose of producing seed-like bodies termed spores, which have the capacity of germinating under favorable conditions of air and moisture to reproduce the vegetative stage of the fungus which causes the real destruction in the pulp.

Infection of sound wood or pulp by wood-destroying fungi occurs in three ways:

1. By spores which are produced on fruiting bodies, and which blow about and lodge on the material.

2. By another type of spores, occurring directly on the mycelium of some of the wood-destroyers, which functions the same as the spores just mentioned. These spores may also be readily distributed by the water used in the manufacturing process.

3. By direct overgrowth of mycelium from one piece to another, due to contact.

The wood-destroying fungi which are to be found in pulp may be the same species which are found in the pulp wood before grinding; in other cases they may have been introduced after storage.

The second class of fungi, which we term "molds" differ from the wood-destroying fungi in not actively attacking the wood fibre and hence are far less important in reducing yields. They are very conspicuous, however, usually much more so than the wood-destroyers as they produce very marked discolorations varying from bright hues to browns and blacks, which contrast markedly with the nearly whitish background of the pulp.



Fig. V.

*Several Laps of Pulp, showing the Damage Done by Wood-Destroying Fungi, Associated with Various Molds.*

These "molds" belong to the "lower fungi," i.e., those forms which produce no large definite fruit-bodies comparable to the mushrooms or conchs of wood-destroyers. The vegetative stage is quite similar in appearance to that of the wood-destroyers. The mycelium, however, is very often covered with masses of spores, often colored, which may give a powdery appearance to the spots or affected areas. The wood-

\* Wells, Sidney D., "Factors Influencing the Value of Pulpwoods." Paper, 2nd January, 1918.

destroyers never produce colored spores on the mycelium. Where spores are present they are always colorless and usually so scattered that they produce no powdery effect.

To the inexperienced it is not always possible to discriminate between the mycelium or vegetative stages of molds and wood-destroyers in pulp but the helpful characteristics may be summarized as follows:

#### Molds.

1. Do not cause marked deterioration in the strength of the pulp.

2. Produce discolorations in scattered spots or small patches, varying from pinkish to green, yellows, browns and blacks.

3. The discolored spots or areas are often powdery in appearance due to large numbers of spores borne on the mycelium.

4. Mycelium, where in evidence, is usually interwoven and cottony in appearance, never compacted into membranous or fan-shaped sheets or strands.

#### Wood-destroyers.

1. Cause marked deterioration in the strength of the

pulp, particularly in the advanced stages of growth.

2. May or may not discolor the pulp, but if so, are likely to be brown and in comparatively large continuous patches due to the spread of the mycelium; more likely to be at the exposed edges of the laps.

3. Infected areas not powdery in appearance.

4. Mycelium may be fluffy and glistening, but more usually compacted into membranous sheets or strands which are usually white to yellowish or brownish. In the "red rust" we get yellowish, fan-shaped areas or strands, which are finer and radiately fluffy at the growing margin.

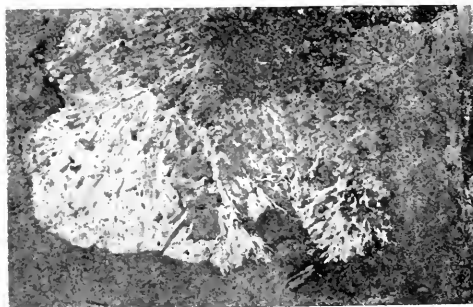


Fig. VI.

*The White Mycelium of a Wood-Destroying Fungus Growing on the Inside of a Lap of Infected Pulp.*

As before mentioned some of the molds produce powdery masses of spores on the surface of the pulp, making very showy spots. There are others, however, which grow inside the lap, apparently producing no spores externally but giving a distinct and characteristic discoloration to the pulp.

The most familiar of the molds producing abundant spores on the surface of the pulp is the so-called "sooty mold." There seem to be several fungi producing dark colored spores which are all designated by this term. Upon examination of "sooty pulp" with a hand lens one is almost always able to distinguish readily brownish-black and greenish-black varieties of molds.

There are at least two other species of molds which produce a gray to black discoloration of the pulp. One of these produces irregular, scattered areas, the other fine, dark gray or black wavy lines.

Still another mold produces dark brown, round, definite spots from an eighth to a half inch in diameter. No spore production has been observed on the surface of these spots.

There are similar spots with sharply defined black margins and also somewhat smaller, jet-black spots. Both the brown and black spots may extend through or only part way through the lap. The brown spots have been found by splitting apparently clean pulp.

Rather conspicuous types of pinkish-cinnamon colored areas are frequently found in stored pulp. There seems to be no surface fungus growth but the spots are apparently produced by a light pinkish mold.

Very little beyond the generalization given, is known concerning the action of molds upon the pulp fibres. Investigators disagree concerning the production by them of enzymes which act upon the cellulose. However, according to a rather recent author\* some bacteria and filamentous fungi "dissolve" cellulose to a certain extent. About twenty cellulose-destroying fungi were identified by this investigator. Among these, *Penicillium pinophilum*, which has been frequently isolated from pulp, was found to produce a very active cytase, an enzyme which acts upon cellulose. *Aspergillus niger*, which likewise occurs in stored pulp was also among the thirty-nine molds tested which gave positive results.

Accepting those results, we should expect to find that at least some of the other species of molds so frequently found on pulp are also to some extent active in destroying the cellulose.

Figures 4 to 6, inclusive, represent typical examples of molds and wood destroyers present in the shipment of infected pulp.

#### Experimental Study of Groundwood Pulp Deterioration.

Three series of tests have been started to determine the value of the addition of antiseptics to fresh pulp. For the first series, thirty-six antiseptics were used. Twenty-five and fifty cubic centimeters, respectively, of the solutions were sprayed on two sheets of pulp approximately 12 x 12 inches. Half of these were inoculated with a water suspension of the spores of eight molds and two wood-destroying fungi, which were originally obtained from infected pulp. These sprayed sheets, together with some unsprayed sheets, were then placed in a humidity chamber to await developments.

The second series of experiments was similar to the first but a larger amount of pulp was sprayed with each antiseptic. Sixteen or twenty sheets of pulp, approximately 24 x 12 x 1/8 inches, were used. Half of these were pressed in a hand press after being sprayed. After inoculation the sheets were also piled in the humidity chamber. Twelve antiseptics were used.

In the third series, some pulp was sprayed with six different antiseptics, as it went over the wet machine. The laps thus prepared were then taken from the press roll, inoculated and also piled in the humidity chamber.

Altogether, tests are under way using thirty-seven different antiseptics. The results of these tests will be published at a later date.

#### Remedial Measures.

In a consideration of the fungus problem with relation to stored pulp it should always be kept in mind that the conditions which permit the development of the molds will also allow the growth of wood-destroying fungi, so that any measures taken to control one

\* Scales, Freeman M., "Some filamentous fungi tested for cellulose destroying power." Bot. Gaz. 60: 149-153. 14 Au., 1915.



class will in general assist in the control of the other.

Sanitation is the big factor in controlling the development of molds and wood destroyers at pulp storage yards, just as it is in the case of controlling any fungus infection.

This sanitation should preferably begin in the selection of trees for pulping, as only sound trees can produce a first-class pulp.

It would be preferable to maintain as low a reserve of wood in the yard as possible in order to avoid infection of the wood. Peeled wood will suffer less from insect attack than wood in the rough. For woods for chemical pulping, the chipping, drying and baling of the wood would, no doubt, tend to avoid infection with subsequent decay.

The wood storage yard should be well drained.

Freshly cut wood should never be piled on top of the supply on hand. The practice of dumping the fresh material in a heap on top of old wood, forms an ideal hot-bed for the growth of wood-destroying fungi and molds. It would be well worth the added expense to pile each new supply of wood separately, on foundations which would preferably permit of ventilation throughout the pile.

The yard should be kept clean of all waste, and weeds should not be allowed to grow up around the foundations shutting off the ventilation.

But even after every precaution has been taken up to the actual production of pulp, sanitation must not then be neglected. The moisture conditions in the piles of pulp laps are ideal for the germination and growth of fungus spores; hence, old infected pulp left in the yard should be removed from the vicinity of the new piles to prevent further infections. It might also prove advisable to spray the ground on which old infected pulp had been piled, with an antiseptic, before using the same space for the piling of fresh pulp.

Although spraying the laps of pulp as they are placed in storage might check fungus attacks somewhat, the best method seems to be to spray the toxic substance on the pulp as it goes over the wet machine. In this way the antiseptic is evenly distributed throughout the lap.

#### ARTIFICIAL SILK FROM WOOD PULP.

The following article compiled by the National City Bank of New York, on the subject of America's rapidly-growing exports of artificial silk stockings will interest the pulp makers whose processes are the first steps in the manufacture of what might be called wooden leg coverings.

Fifteen million pairs of silk stockings, the product of the American forest, were sent out of the United States last year to compete with the product of the Oriental silk worm. Not that these American silk stockings actually grew on the trees, but they were made from wood pulp, the product of American forests. The rapid growth in the art of making artificial silk in the United States is illustrated by the fact that 15,000,000 pairs of stockings manufactured from artificial silk, and worth \$7,677,000, were exported from the United States in the fiscal year 1919, against only 6,000,000 pairs in 1918 and 2,000,000 in 1917.

#### A Simple Process.

The process by which the forests are turned into silk stockings is a comparatively simple one. Wood pulp is treated with caustic soda to form a sodium

cellulose and then dissolved in carbon disulphide. The product, alkali-cellulose-xanthate, is a viscous solution popularly called "viscose," and after being filtered and allowed to ripen by standing is forced through capillary tubes into a liquid which solidifies the threads which are when completed, similar in appearance, dimension and chemical qualities to the fibre produced by the silk-worm. This silk fibre or thread is used in the precise manner in manufacturing as are the threads produced by the silk-worm, which are of similar composition and characteristics. The artificial product has, in fact, greater brilliancy, being more lustrous than natural silk but a somewhat harsher feeling. Some of the early shortcomings of the artificial product, lack of strength and elasticity, have been considerably lessened, and these artificial silks are now used in fabrics for both warp and filling threads, for hosiery, dress trimmings, upholsteries and rugs, also taking the place of real silk for insulating electric wire and making durable mantles for incandescent lights.

The production of artificial silk in the United States has been greatly stimulated during the war period. Formerly considerable quantities of this material, which has been manufactured in Europe for several years, were imported into the United States, especially from Germany, Austria-Hungary, Belgium, France and the United Kingdom, but the reduction in this supply from abroad led the American manufacturer to "get busy," and he turned out in 1914, 300,000 lbs of the artificial silk, in 1917, 6,500,000 lbs, and in 1918 presumably about twice that of 1917 since the quantity of manufactures from this material exported in 1919 was double that of the preceding year and the value nearly three times as great as one year earlier. Meantime, the importation of artificial silk, which amounted to over \$4,000,000 in the year preceding the war, is now only about one-fourth as much as in 1914 although the prices are, of course, practically double those of the pre-war period.

#### CLEAN THE FURNACE, SOOT WASTES HEAT.

The Broke Inustler says:

Soot has an important bearing on the conservation of heat. While much has been said and written regarding the necessity for economy of fuel, this question of soot, equally important from the householder's stand point, has been rather overlooked. Since the coal supply is limited, it is absolutely essential that the maximum quantity of heat obtainable from the fuel be utilised. An examination of many heating systems shows that considerable quantities of soot have been permitted to remain deposited on the interior surfaces of hot-water furnaces, preventing the heated gases from the fire-pot from accomplishing their duty of imparting the ultimate amount of heat energy to raise the temperature of the water in the boiler. The seriousness of this loss is demonstrated by the accompanying table:

Loss in Conductivity of Boiler Plate Due to Difference in Thickness of Soot.	Thickness of Soot	Loss per cent.
Clean	.....	0. 0
1-32-inch	.....	9. 5
1-16-inch	.....	26. 2
1-8-inch	.....	45. 2
3-16-inch	.....	69. 0

'Tis better to have lunched and lost, than never to have lunched at all.

### U. S. NEWSPRINT PAPER REVIEW.

The increase in the production of newsprint in October, 1919, over October, 1918, amounted to more than 19 per cent for Total Print and more than 17 per cent for Standard News, according to the Federal Trade Commission.

Mill stocks of both standard news and total print decreased during October, 1919.

In addition to the stocks given above, 931 tons were reported on hand at terminal and delivery points on October 31, 1919.

The imports of newsprint for September, 1919, which were all from Canada were 6,244 tons less than for September, 1918. The exports for September, 1919, were 3,313 tons less than for September, 1918.

The tonnage to "Other Countries" under the "Exports of Newsprint for September, 1919," includes 192 tons to China, 147 tons to Canada, 134 tons to Australia, 121 tons to Peru, 98 tons to Uruguay, 93 tons to Hongkong, and 75 tons to the Philippine Islands.

The imports of mechanically ground wood pulp for September, 1919, were 2,065 tons less than for September, 1918. The exports of domestic wood pulp were 2,200 tons greater than for September, 1919.

The imports of chemical wood pulp for September, 1919, were 6,468 tons greater than the imports for September, 1918. The bulk of this tonnage was unbleached sulphite and sulphate from Canada. The chemical pulp imported from Norway, Sweden and Finland in September, 1919, totaled 8,740 tons.

#### Jobbers' Tonnage.

Jobbers stocks of both rolls and sheets decreased during October, 1919.

Commitments reported in the month of October, 1919, to sell roll news were 5,671 tons greater than commitments to buy.

Commitments reported in the month of October, 1919, to sell sheet news were 1,634 tons less than commitments to buy.

Publishers' stocks decreased 6,300 tons during the period, which was counter-balanced in part by an increase of 3,231 tons in the newsprint in transit.

Sixty-four publishing concerns held about 56 per cent of the total stocks at the end of the month.

#### Mill Prices to Publishers.

The weighted average price of contract deliveries from domestic mills to publishers during October, 1919, f.o.b. mill in carload lots for standard news in rolls was \$3,725 per 100 pounds. This weighted average is based upon October deliveries of more than 88,000 tons on contracts involving a total tonnage of more than one and a half million tons of paper manufactured in the United States. These contracts, most of which extend until December 31, 1919, include a few long-term contracts made prior to the war at very low prices.

The weighted average contract price based on deliveries from Canadian mills of more than 17,000 tons of standard roll news in carload lots, f.o.b. mill, in October, 1919, was \$3,666 per 100 pounds. This weighted average is based upon the October deliveries on contracts involving more than 200,000 tons of Canadian paper. The greater number of these are short-term contracts covering the year 1919.

The weighted average market price for October of standard roll news in carload lots, f.o.b. mill, based upon domestic purchases totaling more than 9,500 tons was \$4,937 per 100 pounds.

### SOCIALISM AND THE BALANCE SHEET.

Here is another story of the human side of the paper mill that has just come in from our New Hampshire correspondent.

We have just visited a little three-machine mill in New Hampshire belonging to the International Paper Company. Its daily output averages about forty-eight tons and it also has its own groundwood mill, with an average daily production of about twenty tons.

It presents a very interesting case of what can be accomplished with poor equipment but able management, for until a few years ago it belonged to local interests and was steadily losing money.

It was bought by the International Paper Company at a time when they purchased several mills of about the same capacity, and for a long while proved rather a dismal proposition even for them.

The output of the mill up to that time had been confined to news, and it was only natural that a plant with old and small machines could not compete with the rapidly progressing newsprint plants that were springing up in the middle west and in Canada.

But about twelve years ago this particular mill was put under the management of Mr. G. M. Dunham, who had managed successfully an International plant at Pearcefield, N.Y., and who had had considerable other experience in the managerial game, both in this country and in England.

Mr. Dunham saw the futility of continuing on a newsprint basis, and changed the mill's product to specialties—such as half tones, special supplements, rotogravures, etc.

From a losing proposition, the mill changed over night to a substantial money-maker, and has not failed to show a handsome profit for any single month since Mr. Dunham took control.

From an industrial standpoint we thought this case particularly interesting, for the reason that after spending several days among the men of the mill, we found that for the most part they had been there since the place was started, and had continued in their various departments under several different managements and in all kinds of financial weather.

The whole organization runs wonderfully smoothly, and it is very evident that a wholesome respect is entertained for "the old man," as Manager Dunham is referred to. And yet one can hear among these men, just as he will any place else where Labor is concentrated, the remark that smacks of Socialism and which is to the effect that profits are the direct fruit of Labor itself, and that the only thing that withholds these unpaid wages from Labor is the Capital behind it, which is protected by capitalistic laws.

In a nutshell, this institution, with the same equipment and with virtually the same organization of around two hundred men was, until the advent of Mr. Dunham, an undesirable business, and by this alone, the mill has become one of the company's steady profit-producers.

How strange it seems that men who have the intelligence that so many of these workers have, should fail to see that the success of any undertaking of a business nature, while dependent to a large extent on capable labor in all its departments, is a minus quantity in its own business world if it is without the indispensable services of a wise, able and experienced pilot!

# Canada and U.S.A. Newsprint Supply

(By A. E. Cadman, Statistician, Canadian Export Paper Co.)

At the present time the United States is facing a serious shortage in newsprint paper. It is evident that something has to be done to limit the use of paper during the next year or some smaller publishers will have to go out of business. Various remedies have been suggested, such as raising the advertising rates, limitation of sizes, etc., but famine conditions still continue and no concerted plan of action has been decided upon. As Canada is the chief source of supply of newsprint to the extent of around 600,000 tons a year it may be of interest to obtain details of the production and developments in this country.

Canada is in the enviable position of still having enormous resources in pulp wood; large areas of forests are yet untouched, and scientific reforestation has been going on for years past. The exhaustion of resources which is becoming so acute in the United States is not likely to happen in Canada at least for very many years to come.

The exports of pulp wood from Canada, practically all of which were to the United States, have been as follows:

Year	Cords	Value
1904	497,238	\$1,788,049
1905	593,624	2,600,814
1906	614,286	2,649,106
*1907	452,846	1,998,805
1908	901,861	4,655,371
1909	794,986	4,356,291
1910	965,271	6,076,628
1911	926,791	6,092,715
1912	879,775	5,697,910
1913	1,003,594	6,806,445
1914	1,089,384	7,388,770
1915	1,101,914	6,817,311
1916	879,934	5,743,847
1917	982,671	6,448,189
1918	1,002,127	8,339,278

\* Total for nine months—change to Fiscal Years.

Thus Canada has supplied to the United States an enormous quantity of raw materials in addition to which she has shipped large quantities of wood pulp as shown in the following table:

Exports of Wood Pulp to the United States.

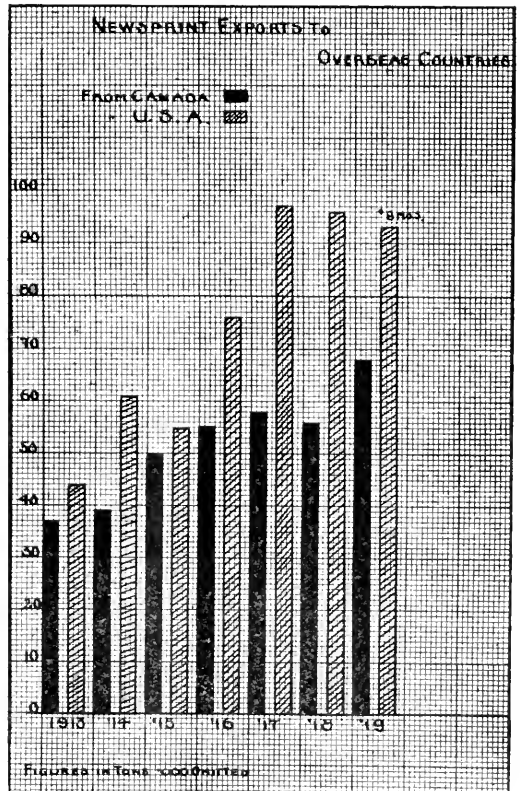
Year	Mech. Pulp		Chem. Pulp	
	Tons	Tons	Tons	Tons
1908	113,679	32,326		
1909	154,179	37,336		
1910	208,125	41,329		
1911	219,240	38,279		
1912	167,448	51,488		
1913	137,922	60,188		
1914	190,095	105,575		
1915	170,804	147,694		
1916	193,799	164,441		
1917	274,761	197,629		
1918	215,585	232,586		

Coming to the manufacture of newsprint: the total daily production of Canadian newsprint mills is estimated at 2,775 tons a day, or nearly 850,000 tons a year. Of this production the greater part is exported to the United States. In 1918 the latter country imported from Canada 596,270 tons of newsprint paper, representing over 70 per cent of Canada's total production.

Expansions are now under way or already provided for by several of the Canadian mills which will increase this capacity by 300 tons per day and by January 1st, 1921, the total production of newsprint will be in the neighborhood of 925,000 tons annually. These figures do not take into account several other projects which are started or for which plans are being made.

It is confidently predicted that in ten years from now Canada will be producing as much as 2,000,000 tons of newsprint per year; a quantity equal to the present annual production in the United States. It is highly probable that the large exports of pulp wood and wood-pulp which have been made in the past to the United States will not continue to increase but will rather decline as Canadian manufacturers realize the benefits to be gained by converting the raw materials into the finished article in their own country. At the present time restrictions are laid on the export of pulp-wood from Crown Lands, a state of affairs which our friends to the south are very anxious, naturally, to have done away with.

It was suggested in an article on the newsprint situation by a leading New York daily, that one of the reasons for the shortage of newsprint in the United States was the fact that Canada was shipping enormous quantities of paper to overseas countries and inferring that the United States publishers were suffering ac-



cordingly. In this connection we give a list of the total exports of newsprint for the past few years showing the quantities exported to the States and to other countries. It does not appear that this contention is

went-grounded. The figures are as follows:

Year	To U.S.A.		Total Tons
	Tons	Other countries Tons	
1913	108,808	37,988	146,791
1914	253,062	39,517	292,579
1915	314,477	50,125	364,602
1916	407,701	55,503	463,204
1917*	481,621	58,678	540,309
1918	549,075	56,018	605,093
1919	594,003	68,424	662,427

\*Figures are for fiscal years ending March 31.

It is very evident from the above table that the publishers in the States are not being "starved" by Canadian manufacturers in order to feed other countries. On the other hand it might be pointed out that the exports of newsprint from the United States show considerably greater increases than do the Canadian exports to other countries.

For the past five years the exports of newsprint from the United States to overseas countries have been as follows:

Year	Tons
1913	43,276
1914	61,239
1915	55,056
1916	76,443
1917	97,544
1918	96,646
1919 (9 Mos.)	93,665

If we look into the causes of the present newsprint shortage we shall find it to lie on the failure of the papermakers of the United States to look ahead far enough and to make arrangements during the last few years to increase their production. This was largely due to Government price restrictions which kept fresh capital out of the business. Added to this is the enormously increased circulation of the newspapers in the chief cities and the tremendous gain in advertising which has necessitated large increases in the number of pages issued by the leading newspapers. An analysis of the number of pages issued by the leading New York newspapers for the first eight months this year shows an increase in pages of over 18 per cent. This increase combined with a great increase in circulation of these papers will account for a tremendous increase in the consumption of newsprint.

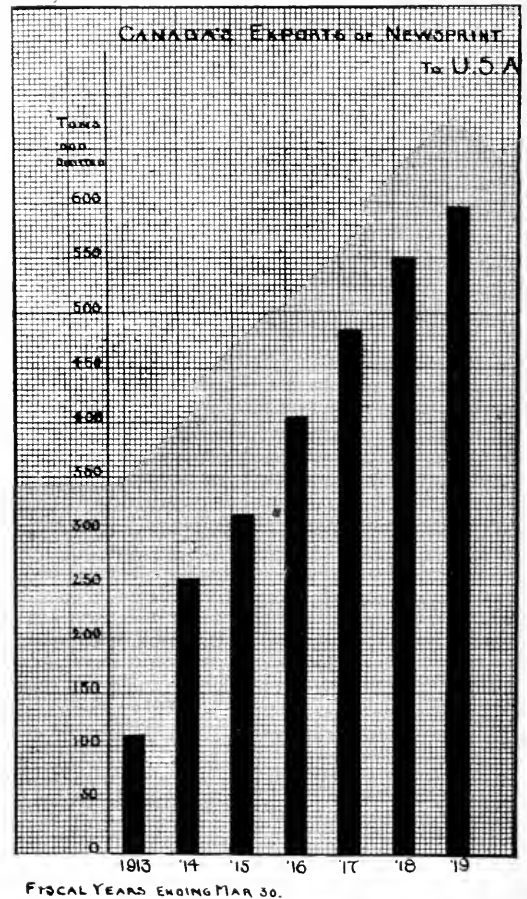
The newspapers all over the country tell the same story. The total advertising carried by the newspapers in Chicago, Milwaukee, San Francisco, Washington, Philadelphia, Buffalo and other cities for the first eight months of this year is in most cases equal to and in many cases greater than the total advertising for the whole year 1918.

The Chicago Tribune states the case very succinctly when it says (November 8): "the present situation is the result of shortsighted attempts in the past to restrict the price of paper, which has kept capital out of the industry." The production of newsprint in the United States has not kept pace with the increased demand as is shown by the fact that the production for the first nine months of 1917 was 934,097 tons while for the first nine months of 1919 it was only 910,752 tons, a loss of 23,345 tons. In addition to which exports from the United States show considerable increases.

If we total the production and the imports and deduct the exports we find that there is actually less paper available for consumption than there was in 1917. This result gives the quantity of newsprint

available for consumption in 1917 (1st 9 mos.) 1,282,436 tons against 1919 (1st 9 mos.) 1,271,227 tons, whereas Canada's exports to the United States show an increase from 406,773 tons to 454,140 tons.

The figures show that Canada has not suffered so much as the United States from short-sightedness although there have been restrictions and limitations but production has increased, although not so rapidly as the increased demand. If, however, the present rate of increased production is maintained it should catch up with the demand in the course of twelve months or so. In the meantime it looks as if the United States publishers will have to settle among themselves who is going to get the paper.



**PORT ARTHUR WORRIED.**

A rumor that the Government may cancel the price of \$17.50 for Nipigon power has caused some uneasiness in Port Arthur. It is largely on the basis of this figure that the Great Lakes Paper Co. agreed to locate in the easterly Twin City. The loss of a \$4,000,000 dollar mill would be a great misfortune, so a deputation has gone to Toronto to wait on the Government.

A flower looks better than a rusty can, and smells better.

**EXPORTS INCREASE 3½ MILLIONS.**

Canadian Exports of pulp and paper during September 1919 amounted in value to \$8,330,557, as compared with \$6,410,990 in September 1918, a gain of \$1,919,567. The increase for the first six months of the fiscal year 1919 was 3½ millions over the same period in 1918.

Another gratifying feature is a falling off in the exports of pulpwood logs of \$333,060, the amounts being \$884,575 in September 1919 as compared with \$1,217,635 in September, 1918. The details:

Month of September	1918.	1919.
Paper and boards . . . . .	\$3,489,328	\$4,587,579
Chemical pulp . . . . .	2,584,097	3,231,576
Mechanical pulp . . . . .	337,565	511,402
	<hr/>	<hr/>
	\$6,410,990	\$8,330,557

An interesting fact showing the world-wide development of what is Canada's greatest exporting industry is disclosed in an analysis of the shipments of newsprint paper amounting to 53,975 tons valued at \$3,842,641. Shipments were made to United Kingdom, United States, Argentine, Australia, Brazil, South Africa, New Zealand and Peru and other countries.

Pulp and paper exports for the first six months of the fiscal year are as follows:—

Six Months.	1918.	1919.
Paper and boards . . . . .	\$21,821,915	\$27,119,246
Chemical pulp . . . . .	15,903,189	14,008,388
Mechanical pulp . . . . .	2,512,086	2,618,338
	<hr/>	<hr/>
Total . . . . .	\$40,237,190	\$43,745,972

The Howard Smith Paper Mills, Ltd., are making a new line of ledger papers, Progress and Victory, to correspond with their high grade sulphite bonds of the same names. There is an exceptional demand for these bonds and from the sample of the ledger paper examined its success is also assured.

**WIRE LACING.**

**An Asset to Modern Belt Practice.**

There is little doubt but that the present vogue for Wire Lacing is amply justified by the service and satisfaction that this class of belt joining gives.

The smoothness of the joint, eliminating the jar caused by the more bulky joint in the case of leather lacing, being one of the main features of its claim. That there is strength enough in the material of which the modern wire lacing is made has been amply proved and the growing popularity that it now enjoys shows that the belt users of the Dominion are fully alive to its advantages.

Of course the endless belt, where practicable, will always hold sway but where a jointless belt is not possible and where, on account of the small size pulleys used, the belt must have all the flexibility possible, the use of the wire lacing is undoubtedly the simplest and at the same time the most practical solution of the situation.

The fact that the hole where the wire penetrates the leather is so small means that the fibres of the belt are not cut as in the case where a leather lacing is used and the perfect "staggered grip" now possible with the modern "mounted on the strip" style of clips makes the possibility of breakage at the joints almost a negligible factor.

One of the main objections to the old time wire clips was the possibility of the wire pulling loose and standing off from the belt, a fruitful cause of accidents both to machines and workers as the sharp point could, and often did, inflict severe cuts on the arms and hands of passers-by. However this is amply overcome in the modern clips as the ends are turned so that the pull will tend to anchor them more firmly in the leather instead of putting them outward.

Another point that is well worth considering along this line is the ease with which a joint can be made with a wire lacing.—"The Amphibian."

**GOING TO SCHOOL IN A LOGGING CAMP.**

The "Canada Lumberman and Woodworker" for September 1 publishes an interesting, thought-provoking article, "The Camp School and What It is Carrying Out," an account of educational work and possibilities among Canadian lumbermen. Its author is Raymond C. Dearnle, M.A., Ph.D., who bears the official title of Eastern Inspector, Frontier College.

Dr. Dearnle's presentation of the work and its needs is direct, sincere, convincing. It appeals to the sense of justice of those who readily accept the principle of supplementary education for the ambitious industrial worker in the city, but gives little thought to the frontier laborer whose ambitions and desires are not unlike those of his city brother and where contributions to national productiveness are often far greater. Why, indeed, should he not have an equal chance for acquiring knowledge and increasing his mental vitality?

Especially significant in these times of longing for a deeper and more firmly welded national life is Dr. Dearnle's belief that the presence of foreigners in the lumber camps is a vital argument for an educational training which shall give these men an understanding of the meaning of Canadian citizenship. The possible results are as far-reaching as the imagination.

Dr. Dearnle's plea for greater co-operation from employers is not, however, based upon theoretical results to be gained. Those who are acquainted with the work of the Reading Camp Association since its founding by Mr. Fitzpatrick of Queen's University, know of its splendid achievements and are glad that it has acquired its charter under the name Frontier College. The regret is, as Dr. Dearnle points out, that because of lack of funds, this work at present can reach only sixty or seventy camps a year.

The call for instructors to join the staff of this unique college and go out as comrades and keepers of the frontiers men must be a challenge to young men of education, determination and undimmed vision. It must, moreover, bring to the minds of all of us the realization that the time has passed when we can soothe our consciences and clear our garrets by making up a box of aged magazines for the men in the lumber camp. We are no longer free to disregard their intelligence and our responsibility.

Educational work in the lumber camp is a movement which has progressed, as great movements do, through the unwearied struggles of a few forward-looking men. It needs now the definite understanding and the practical interest of those who look beyond the present and see the great human and national-invigorating possibilities of this work which has been proved in the testing, to be of immeasurable worth.



## Technical Section



### COUNCIL OF TECHNICAL SECTION CONSIDERS IMPORTANT BUSINESS.

On the 15th of November all the members of the Council of the Technical Section gathered at the Secretary's office to consider plans for the coming annual meeting and to deal with some other important phases of the work of the Section. Among the topics discussed was the progress that is being made in the preparation of manuscripts for the Text Books and the proposed contract between the McGraw-Hill Book Company and the Joint Executive Committee representing American and Canadian papermakers. The editor of the Text Books reported that work is progressing well with the manuscripts and the Council expressed satisfaction at the progress which has been made.

The Secretary reported that a considerable number of students had found employment during the summer months in a number of mills and that on the whole they had given very good satisfaction and many of them had been invited to return. The greatest success in the employment of students both from the point of view of the student and of the mill occurred where the management took pains to make a careful preparation and schedule so that the student had a definite plan to work on. A number of the students have prepared essays and these are due by the first of December. Chairman Stadler was empowered by the Council to appoint a committee who should act as judges of these essays.

A matter that is of prime importance to the pulp and paper industry in Canada and is intimately connected with the work of the Technical Section is the condition of the Forest Products Laboratories. During the past two years there has been a general exodus of men from the Laboratories to the industrial field with a consequent disruption of the very competent staff that has been doing such excellent work at this institution. For some time past the Pulp and Paper Association has been trying to work out some scheme by which the Forestry Branch could be assisted and supported in carrying out the work of the Laboratories. This has been a difficult matter, but from the report of the secretary it seems that a working agreement will soon be possible by which the Association will be able to render valuable assistance to the work of the Laboratories by giving such financial help as will enable the government to obtain and keep a fully qualified man as superintendent of this important department.

The matter that perhaps aroused the greatest interest in the meeting was the discussion of arrangements for the annual gathering of the Technical Section, which it was decided to hold on the day previous to the annual meeting of the Canadian Pulp & Paper Association. The actual date has not been finally determined, but it is expected that the next meeting of the Executive of the Association will decide on the last Friday in January, which would bring the T. S. meeting on Thursday, the 29th. A number of interesting suggestions were brought forth and discussed by the Council. It would be a little premature to mention these suggestions as they have not yet been passed on by the Committee on Program and the success of some of them will depend upon their being carefully worked out before an

announcement is made. It is certain that they will be received with great interest and that the meeting will uphold in every respect the reputation of the Section for enthusiastic gatherings and valuable discussions.

### WILL A STONE ROLL WORK?

A reader of the Pulp and Paper Magazine asks whether a granite press roll will work on a machine more than 160 inches wide. From the editor's recollection of a visit three years ago to the mill from which the query comes, they are making book papers from sulphite pulp and old papers. No doubt other readers are also considering the question of putting in stone rolls so that a full discussion will be of rather wide interest. We believe there are no mechanical difficulties in the way of manufacturing the roll, providing the stone is obtained. It may be like cooking the hare—the first thing is to catch the hare. The stone can be had but it may take some time to get it.

But let us hear from those who are making and those who are using such rolls.

### THE USE AND ABUSE OF CHAIN BLOCKS.

I would suggest that anyone having cause to use chain blocks be told to use a rope or rope blocks to put them up or down, writes J. M. Mark in "Makin' Paper." Seven-eighths of all the bent shafts and broken wheels are caused by letting them drop to the floor. A ton chain block weighs 90 pounds, which is too much weight to try to lift standing on a ladder. Very few chain blocks are broken by ordinary use. It is the abuse they get that break them. If there is a heavy load to lift, don't use two small chain blocks to take the place of one large one. By using two small ones the load may all come on one block, causing the block to break and letting the load drop and hurting some one.

### "WOOD PULP AND ITS USES."

The first consignment of six books on our order for "Wood Pulp and Its Uses," by Cross, Bevan & Sindall has just arrived from London. The invoice has not come in yet, but the price will doubtless be \$2.00, the same as for the first edition. Five cents should be added for postage, and remittance made by money order.

**B.O.** A Canadian lumber raft to cross the ocean propelled by its own steam. Weekly Bull., Dept. of Trade & Commerce, 20, 1158-63, (1919). Descriptions are given of a demountable ship made of 2,000,000 ft. of cut lumber, which is to be built in B.C. and which will make the journey to the United Kingdom under its own steam, of a Swedish raft put together at Haparanda, Sweden, and floated to Copenhagen, of the Bayley Trans-Oceanic Timber Transport (as described by the designer), and of the Benson log rafts, which are made up at Clatskanie, Oregon, and journey to San Diego, Cal. (1,200 miles).—A.P.-C.

Don't allow rubbish to accumulate in or near buildings.

# UNITED STATES NOTES

With the acquisition recently of part of the capital stock of the Hercules Paper Corporation by a group of financial interests headed by Josephthal & Co., and Morton, Lachenbruch & Co., it is expected that there will soon be instituted a policy of expansion aiming to establish this company as one of the largest paper making concerns in the United States. The Hercules Paper Corporation was incorporated some months ago in New York State and operates at the present time two mills, one at Cornwall-on-the-Hudson and the other at Rock City Falls, New York. It was announced after the recent deal had been concluded that a third property is to be taken over in the immediate future. Of the capitalization of 100,000 shares of no par value, 55,000 have been issued in exchange for the two properties purchased by the company and the remaining 45,000 have been underwritten by the interested banking syndicate. The offering of the stock will be privately made.

A resolution urging on all members to take steps to reduce the consumption of newsprint paper 10 per cent during the coming year was adopted by the Southern Newspaper Publishers' Association at a meeting held last week at Birmingham, Ala. Plans outlined include reduction of type, head and illustration sides, decreased reading matter and advertising space, the latter to be affected by increased rates, and also advances in subscription rates to meet white paper cost and expense of delivery.

Public ownership of timberland, with private cutting and marketing, is discussed in a recent editorial in the San Francisco **Bulletin** as the probable, and perhaps, inevitable means of averting a continuance of the threatened paper famine. "Smaller papers and considerably increased advertising rates," says the **Bulletin**, "appear to be among the certainties of the early future. There is a world-wide shortage of paper and nothing but a substantial reduction in the size of daily and other journals can avert a famine, which would send large numbers of weaker publications to the wall. At the present rate of consumption the newspapers are about ten per cent more paper than the annual supply, which means for the year a shortage of approximately 300,000 tons. The manufacturers do not appear to be responsible. They have enlarged their plants and are maintaining a 100 per cent production; but they cannot keep pace with the demand, and mainly for the reason that they cannot obtain sufficient raw material. Outside the plea for much smaller newspapers there are various recommendations for meeting the situation. Chief among these is a plan for the public ownership of timberland, national or State, with private cutting and marketing. It is urged, and with much force, that large projects for the growing and conservation of timber trade cannot be undertaken by private corporations. It is too long for corporation capital to wait for a return, and, moreover, the enterprise is too hazardous. But the nations and States can wait for returns, and the development and conservation of forests are work which can be satisfactorily conducted under public ownership."

Through a recent re-organization of the Kalamazoo

Trading Company, dealers in paper stock at Kalamazoo, Mich., the I. V. Sutphin Company of Cincinnati, Ohio, which has acquired the interests of the trading company's New York stockholders, now controls seven plants in all, located at Cincinnati, Toledo, Atlanta, Nashville, Indianapolis and Kalamazoo. The Kalamazoo concern, known as one of the leading paper stock houses in the United States, having been engaged in this line for the past 50 years, will have for its officers under the re-organization, Albert F. Meisterholm, president and manager; Stuart B. Sutphin, vice-president; William Burke, secretary and Sam. V. Sutphin, treasurer. F. C. Sunblad, formerly president, and John French, secretary-treasurer, have retired. The capital stock has been increased from \$30,000 to \$50,000.

In an address to the Washington section of the American Chemical Society, Dr. Charles H. Herty declared that German dye manufacturers are at work producing immense quantities of colors with which they hope to regain their old trade prestige, and urged the passage of protective legislation for the American dye industries. He favored the Longworth licensing bill as a means of assuming temporary control of the situation. Dr. Herty has just returned from Germany where he made arrangements for the importation through government channels of a limited amount of vat dyes for use in the United States. German dye-makers, Dr. Herty said, are confronted with a coal shortage and transportation difficulties, but in spite of these handicaps they have expanded their plants, laid in great stores of raw materials and are now turning out colors in enormous quantities.

## BROWN CORP. LOST 3000 CORDS OF PULP WOOD

In addition to the earlier report of the Brown Corp.'s fire, it has been learned that one mill was destroyed and another damaged at Lobin, near Trois Pistoles, with 2,000,000 feet of lumber and 3,000 cords of pulpwood. The fire was caused by children playing with matches in a nearby residence. The estimated loss is \$1,000,000, covered by insurance.

## J. C. YULE JOINS KENWOOD MILLS.

Kenwood Mills, Ltd., announce the engagement of Mr. J. C. Yule as their Canadian representative, in the sale of Kenwood felts and jackets.

Mr. Yule, who, by the way, is a Canadian, will be located in Arnprior, and his time will be devoted exclusively to the development of the Canadian business.

Mr. Yule has spent nineteen years in the actual manufacture of news and similar papers. Most of that time in charge of the manufacturing end in addition to that he has had eight years' experience in the sales and executive end of other paper lines. He is a brother of Mr. Watson Yule, of F. C. Huyek & Sons. Mr. Yule's experience and advice are at the service of the industry.

The new shipping building at Grand Mere is practically finished and is being used.

# PULP AND PAPER NEWS

Dr. Judson F. Clark, of the firm of Clark & Lyford, Ltd., Forest Engineers, has gone to California for the winter months on account of his health. Dr. Clark still retains his interest in the firm and expects to return to Vancouver during the summer months.

Mr. P. L. Lyford of this same firm made a rather important inspection and cruising trip during September to Southeastern Alaska. Mr. Lyford made the trip in the interests of Eastern capital to report on the timber of Southeastern Alaska for pulp wood in connection with the development of a large paper plant.

Mr. R. H. Thompson, formerly City Engineer of Seattle, the man who became known prominently in washing the hills of Seattle into the Bay, made the trip in connection with the same interests to report on the water power in connection with the contemplated plant.

The Bathurst Lumber Company, Limited, of Bathurst, N.B., have purchased two large sized barking drums from the Canadian Barking Drum Company, Limited, to take care of extensive alterations they are making in their wood room. The Donnacona Paper Company and the New Ontario Colonization Company have also installed extra drums which were secured from the same company.

The new building erected by the Vegetable Parahment Company at Merritton is about completed and the installation of machinery is now in progress. The company expects to start operations about Jan. 1st next.

Representatives of one of the Detroit papers are said to have been looking over the ground in the St. Catharines district with a view to erecting a mill for the manufacture of news print. While no definite announcement has been made as yet it is considered possible that a site may be selected in Thorold on the ground occupied by the pulp mill recently burned and that next year may see the new institution in operation.

The management of Dextrine Products at Thorold reports that while the company was unable to expand owing to lack of tariff protection on their output, yet their years' turn-over was fairly satisfactory, the shipments having totalled about 180 tons at \$180 per ton. The product of the company is used for sizing and adhesive purposes in paper making.

As marking the completion of forty years of service with the Canada Paper Co., Toronto, by W. L. Young, the popular accountant of the firm, the members of the staff waited upon him the other day and presented him with a well-filled wallet. H. B. Donovan, the sales manager, made the presentation, accompanying it with a few well-chosen words of appreciation touching Mr. Young's long and faithful service with the company and, incidentally referring to the fact that Mr. Young had entered the firm's employ as an office boy. Mr. Young made an effective reply in which he dwelt upon the friendships he had formed among all ranks of the company and the loyalty and co-operation of the office staff.

Among the prize winners in the recent window-dressing contest in connection with the Victory Loan adver-

tising campaign was E. H. Wilkinson of the Wilkinson Paper Co., 76 Bay Street, Toronto, who won the fourth premium ad incidentally a good deal of praise for his effort. A Vickers Viny flying machine formed the centre of the display with red, white and blue streamers. Back of the aeroplane was a solid block of toilet paper rolls enclosed in white wrappers which revealed the words "Buy Victory Bonds." In one corner was an owl surveying the scene from a fir tree and wearing an investor's button, which indicated the proverbial wisdom of the bird in his financial outlook. One part of the display constituted a globe showing the British Dominions and back of it was a picture of John Bull bearing the words "Our Empire Trade Needs Credit." Rope arranged in form of letters spelling the word "Invest" was attractively arranged on the floor of the window and with other decorative effects the display was one of the most attractive seen in the city.

It is the aim of the Ontario Pulp and Paper Makers' Safety Association to have at least one of a cleverly designed calendar placed in every pulp and paper mill in the province with a view to further propaganda in connection with their work. The designer of the calendar is A. P. Costigane of Toronto, the Association's engineer. At the top of each monthly sheet is a suitable illustration showing how many accidents around the mills are attributable to carelessness, oversight and neglect, and as these are prominently displayed everyone about the mills is likely to be impressed by the ideas it is intended to convey. The calendar is a novel and effective one.

A charter has been granted to the Delphic Press, Limited, with headquarters in Toronto and a capital stock of \$20,000, to carry on the business of printing and publishing. Among the incorporators of the company are William S. Spotton, H. M. Halliday, George Harris, all of Toronto.

A charter has been granted to the Brennan Show Card System to manufacture, operate, sell and deal in show cards and display advertising signs and to instruct pupils in the art and business of showcards, etc. The headquarters of the company are in Toronto and the capital stock is \$40,000.

The announcement is made that a federal charter has been granted to Howard Smith Paper Mills, Limited, with a capital stock of \$7,000,000 and chief place of business at Montreal. The company is empowered to acquire and purchase as going concerns the businesses at present carried on in Montreal and elsewhere by the Howard Smith Paper Mills, Limited, and the business recently carried on in Toronto and Cornwall at the Toronto Paper Manufacturing Company. The company is also empowered to buy, sell and deal in paper, pulp, pulpwood, etc.

The Canadian Pacific Railway have adopted a new standard form for presentation of overcharge claims. Provision is made for setting forth all particulars of claims, such as description of shipment, name and address of shipper, amount claimed, etc. The form, which has been approved by the Freight Claim Association



and Interstate Commerce Commission, will be put into general use among the shipping firms using the C.P.R. as carriers.

The name of the new Empire Wall Paper Company, Limited, Toronto, has been changed to the Empire Wall Papers, Limited.

At a meeting of the directors of the Globe Printing Company held in Toronto on Thursday of this week, William Findlay was appointed business manager. Mr. Findlay, prior to joining the Globe staff as advertising manager last January, was connected with the Journal Dailies of Ottawa. He succeeds J. F. MacKay, who went to the Russel Motor Company.

Muller, Flowers Co. of St. Catharines, are now doing a large amount of electrical repair work for pulp and paper mills. This consists mostly in making coils for motors, wiring transformers, etc., much of which work was formerly done across the line.

Winter sports are receiving attention at Iroquois Falls. A snow-shoe club is being formed, with the intention of using logging camp 15 as a club house, and the new skating rink is to be finished by Dec. 15.

The Abitibi Company's townsite office was gutted by fire recently, and many records were destroyed. By working all day Sunday, the office was repaired, even to the electric lights and ready for business on Monday. An overheated furnace is supposed to have caused the fire.

The MacLeod Pulp Company property at Milton, Nova Scotia, changed hands last week, having been purchased by Frank F. J. Barnjum of Annapolis Royal N. S., and associates. This property consists of two groundwood mills with a present capacity of 100 wet tons per day of groundwood pulp, a water power development of 5,500 h.p. and an undeveloped power of 20,000 h.p. which is the largest water power in Nova Scotia. As Mr. Barnjum now owns 325,000 acres of fee timberlands, all tributary, either by stream drive or short rail haul, to these mills, it makes a strong combination. Extensions are planned, it is reported.

#### CANADIAN PRESS ASSOCIATION INC.—THREE SECTIONS.

Toronto, November, 29, 1919.—The Canadian Press Association, Inc., last night completed the business of its three-day annual convention, the sessions of which were held in the King Edward Hotel, under the chairmanship of W. J. Taylor, the president. The convention just closed marks the end of the Canadian Press Association, as at present constituted, although the organization remains, but with a wider and more efficient scope for its activities. It was decided to enlarge the sphere of the Association by creating three separate bodies within its membership, each of which will have its own business office and manager.

These three bodies will serve respectively the daily newspapers, the weekly newspapers and trade and class publications. Each of these bodies will fix its own membership fees to meet the cost of the increased service it proposes to give its members. Each of the three bodies will be affiliated with the Canadian Press Association, Inc., and will constitute its entire membership as members of the parent organization, which will be operated under the direction of a council composed of ten delegates from each of the three bodies. This council will elect annually the president and officers of the Association. The annual meeting of the parent organization and the three affiliated bodies will be held at the same time and place. A committee of fifteen, represent-

ing each of the three sections, evolved the plan in response to the desire of many members that each section should be empowered to extend its service in as large a degree as its members desired and were willing to pay for. The new daily newspaper division in particular is planning a large extension of its service to daily newspapers. The president, directors and various committees will continue their present duties in the Association until December 31st.

M. R. Jennings of the Edmonton Journal was elected president of the Canadian Daily Newspaper Association, and A. E. Caiman, of the Picton Gazette, heads the Weekly Association. The trade and class section have a committee of ten and will select its officers later.

In his annual address, President Taylor referred to the generosity of the publishers in helping to make the Victory Loan the success it was and said: "I would say that among other things the press should cultivate a keen eye for social and industrial justice, that it should advocate and continue to advocate the abolition of privilege and concern itself with the interests of the masses, and it should prepare itself to speak in a way that succeeding generations will reap the benefit by courage and energy and a sincerity and honesty of purpose. Too much of the prosperity of today is superficial. If ever there was a time when the press of a country should be persistent in preaching thrift and economy it is now. In order to decrease the national debt and rectify the unfavorable trade balance with the States, unnecessary imports should be decreased. The agitation for shorter hours and higher pay at the same time seems to have become a disease. The continuance of this joint demand means to me that in the final analysis, labor is, after all, merely committing suicide. Economy and honest work have been proven to be the way to true happiness and prosperity."

Enthusiastic endorsement of the Empire Press Union Conference to be held in Toronto in August and September of next year was given during the session. It was unanimously resolved that an executive committee consisting of Lord Atholstane of the Montreal Star, J. E. Atkinson of the Toronto Star, P. D. Ross of the Ottawa Journal, and W. J. Taylor of the Woodstock Sentinel Review, be appointed to make all necessary arrangements in Canada in co-operation with the Empire Press Union. The Conference has received assurance that a number of most distinguished journalists in the Empire will attend, including Lord Northcliffe, Lord Burnham and Sir George Riddell.

#### SWEDISH PRODUCTION OF WOOD PULP BELOW NORMAL.

Advices received in New York from Stockholm report that during the first seven months of this year the production of wood pulp in Sweden amounted to about 23,400 tons of bleached and 293,000 tons of unbleached, compared with a normal yearly output of about 58,000 tons of bleached and 810,000 tons of unbleached. Swedish manufacturers, the advices state, have experienced an active demand since the middle of July, England in particular being a good buyer.

#### FOREST FIRES IN QUEBEC.

The past fire season in Quebec has been, from the standpoint of weather, one of the worst in years, but the number of fires was not large. There was practically no difficulty with settlers. The worst fires were caused by dam-keepers and river drivers of operators.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November, 29, 1919.—A visit to the pulp and paper mills in the St. Catharines district reveals the fact that in no other line of industry in the country are the mills running at so high a pressure in order to meet the great demands that are being made on them for paper, both for home and export trade. Particularly is this so in connection with newsprint. With newsprint selling at 7c per pound in New York, it is on record that one of the Canadian mills was offered an order for fifteen cars at 8c and flatly turned it down, declaring that their orders for other lines of paper would not justify them in changing over the machines even at the price offered. It is estimated that the production of newsprint at the present time is about ten per cent below consumption and the mills appear to be totally unable to meet the requirements. As far as the demands upon the output of the mills in the St. Catharine district are concerned, the mill managers there say that they are booked up for months ahead and unless provision is made for increasing the output, in the way of additional plants, the scarcity and consequent high prices will continue indefinitely. The situation is relieved to some extent, however, by the excellent position of all the mills in regard to the coal supply. Practically all of them are stocked ahead for the winter months and the coal shortage, due to the strike in the United States coal mines, will not hamper the mills unless it is unduly long continued. Another bright ray is the fact that negotiations are said to have been opened by a Detroit newspaper firm of publishers with a view to erecting a paper mill at Thorold on the site of the pulp mill, recently burned. While nothing definite has been arranged as yet it is known that the enterprise is under consideration.

In accounting for shortage of newsprint, it should also be stated that not a few of the larger Canadian mills are practically out of the market because they are tied up with contracts for next year and there are few new mills starting up. Only a small percentage of the mills are in a position to take care of the current trade.

Tissue paper mills and the makers of kraft papers are all busy and are experiencing difficulty in meeting

the demands made upon them. With Christmas only a few weeks away there has been a big demand for crepe tissue and other specialties and to meet this the Interlake Tissue Mills at Merriton had to shut down their toilet making plant and turn it over to the manufacture of their special lines, orders for which are sufficient to keep this department going for six months to come.

In book and bond papers prices remain firm with a continued big demand. Most of the Canadian mills are away behind with their orders and in some cases it will be several months before they catch up. The Toronto jobbers are clamoring for bigger supplies which the mills cannot furnish, particularly in coated stock. One cause of the big demand for coated book is that many firms during the war period were busy with war contracts and did not have to use paper and printers ink to keep themselves before the public. They had all the business they could handle and it didn't need advertising. A new era came with the completion of hostilities and now many firms that were handling war work have to resort to publicity through circulars, booklets, etc., etc., in their search for new avenues of trade.

The demand for ground pulp is reflected in the inadequate production of the paper mills and other classes of the material as well as being turned out in far similar quantities than are required to meet the calls of the publishers and other paper users. One manufacturer of groundwood pulp said that a mill with groundwood to sell could get pretty nearly any price that was asked, so great was the demand. There are many firms that want it and want it badly and are willing to pay any price to get it. The particular man referred to added, however, that his mill would continue to supply the smaller users who were experiencing the greatest difficulty in getting supplies rather than the big concerns which, although hampered, were in a more independent position by reason of their size and consequent influence. The manufacturer of groundwood pulp quoted, expressed the belief that if the production of paper should not be considerably increased during the next few months and the shortage relieved, some of the smaller publications would be

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Have an extensive  
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any surplus to  
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compelled to go out of business. This view is not generally held, however, most of the paper and pulp makers believing that things will right themselves in time. In this connection it is interesting to quote the figures of the Canadian Pulp and Paper Association which reports that the daily production of newsprint is over 500 tons greater than indicated in some statistics published some days ago. The actual production figures at this time are 2,775 tons a day or 800,000 tons a year. Expansions now under way or already provided for by a number of companies will increase the output by an average of 300 tons a day or 90,000 tons a year, although, it is predicted, the maximum increase will not be achieved before January, 1921. The Spanish River Pulp and Paper Mills, Limited, are the largest producers, their daily output being 500 tons. One of the two standard Fourdrinier paper machines recently purchased from the Pusey Jones Co. is now in operation, and when the other commences running six machines in all will be devoted to the making of newsprint. It is also interesting to note that the company has this year erected fifty houses for their workmen at Espanola.

Paper and pulp prices are quoted as follows:—

**Pulp Prices.**

	F.O.B. Mill.
Groundwood pulp . . . . .	\$42.00 to \$45.00
Sulphite, news grade . . . . .	75.00 to \$80.00
Sulphite, easy bleaching . . . . .	\$92.00 to \$95.00
Sulphite, bleached . . . . .	\$115.00 to \$120.00
Sulphate . . . . .	\$87.50

**Paper.**

The only changes in paper prices recorded recently are in the following lines:

Natural grease proof . . . . .	16c
Bleached grease proof . . . . .	18c
Genuine vegetable parchment . . . . .	26c
Bleached white glassine . . . . .	25c

**NEW YORK MARKETS.**

New York, November, 29.—Bearing significance in that they reflect the heavy consumption of paper of various kinds and the steady diminution of stocks in both manufacturers' and dealers' hands, the statistics gathered by the Federal Trade Commission on the paper market for October show that mill stocks of all grades of paper decreased 20,960 tons during the month. Details of the amounts of various stocks were published last week.

Judging from the conditions prevailing during the month now coming to a close, mill stocks of paper are doubtless smaller at present than they were a month ago. Consumption during the past few weeks has, if anything, increased for all kinds of paper with the possible exception of book papers, whereas the strike of coal miners has necessitated many mills reducing operations to a point where production has been materially lessened. The Commission's figures bring out one very salient point and that is the depleted condition of stocks of newsprint. With the mills of the country having aggregately only four days supply on hand, it is no wonder that offerings are so limited that consumers are experiencing such difficulty in obtaining print paper.

Every perceptible factor points to continued strength in the paper market. Demand is still on the rise and the potential requirements of consumers are of such magnitude that indications are there will be no recession of demand for a long time to come. Daily

newspaper publishers are exerting every effort to locate available supplies of newsprint, and the market is in a condition where they are meeting with little success in doing so. It is a fact that a good many mills have switched from other grades of paper to news and are perfecting plans to continue running on the latter for an indefinite period, yet the increased production is falling far short of covering the wants of buyers, which situation conveys a single thought namely, that consumption is of such large volume that there is not sufficient machinery in the paper mills of the country to cope with it. No further change in prices on newsprint has been recorded, but for that matter quotations are mainly nominal and almost any price mentioned as having been paid seems highly probable. Between 7 and 8 cents per pound at mills for standard roll news is the range generally heard on spot shipments, but there are few lots being offered at any price.

The strike of printers and pressmen in New York has terminated and the resumption of full operations by the various printing establishments in this city is creative of more demand for book papers as well as for fine papers. Prices are strong in every respect and the tendency is upward. Manufacturers are extra cautious about accepting additional orders, partly because they are sold so far ahead that they are not desirous of committing themselves further, and partly owing to the uncertainty regarding their supplies of fuel. This latter factor is becoming of greater importance every day and there is no denying that unless some relief is soon afforded from the shortage of coal rapidly growing acute, the majority of paper mills of the United States will be obliged to close down.

The board market has taken on a stronger complexion as a result of the refusal of manufacturers to book orders pending the settlement of the coal miners strike. Sales have been reported in the jobbing trade at advanced prices and the general trend of quotations is upward, which is unusual for this time of the year when the movement of the market invariably is in an opposite direction.

**GROUNDWOOD.**—Shortage of available pulp and strength in prices are the two main characteristics of the groundwood market. Buyers are eagerly inquiring in all directions for supplies and are meeting almost any figure quoted so long as they can secure much-needed pulp. Just what actual market values are is problematical. Very few offerings of No. 1 freshly ground spruce pulp are being made for prompt delivery producers with rare exceptions having their output sold on contract for some months to come. Business in the open market therefore is confined principally to scattered transactions wherein this or that mill has a small tonnage of pulp to let go of. Reports have been heard of sales of spot pulp at \$60 a ton f.o.b. shipping points, and while this figure is believed to be slightly above average market levels, there seems no reason to doubt that ground wood has realized as much.

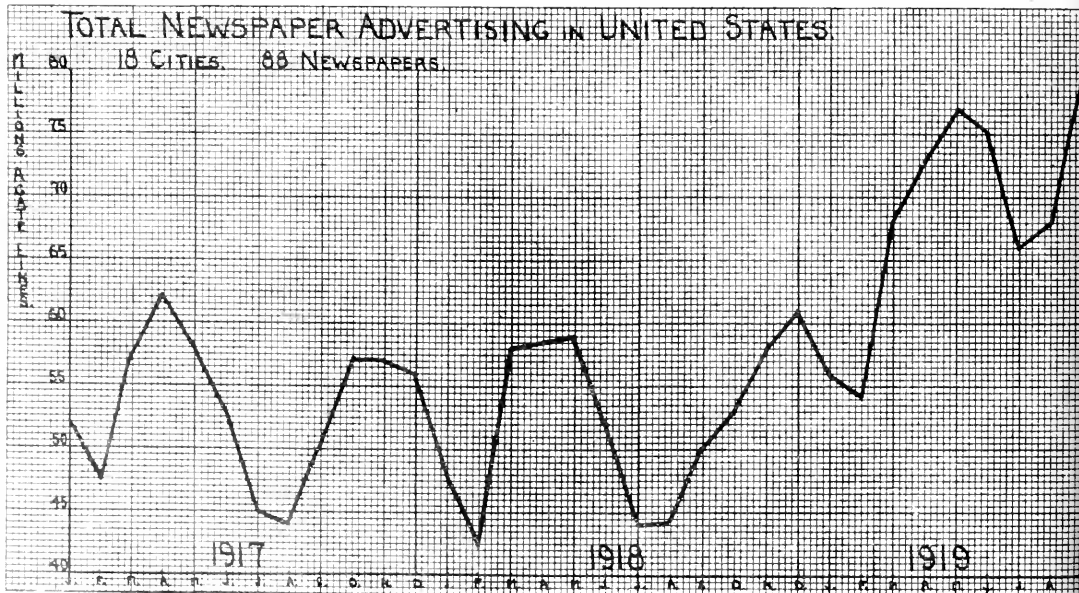
**CHEMICAL PULP.**—Business of consistent volume has been done this week in chemical wood pulp, and the market displays a firm undertone. Consumers are placing orders in as guarded a way as possible, presumably with a view to keep from exciting the market, but offering of any kind of pulp do not remain long unabsorbed on the market, and, as regards some qualities of pulp, there does not appear to be enough to go around. Bleached and easy bleaching sulphites particularly are scarce. Leading producers of these grades

are virtually out of the market as sellers and those consumers unprotected by contract supplies are having difficulty in locating all the pulp wanted. Newsprint sulphite also is a firm item and is selling freely at \$70 to \$75 a ton at pulp mills for prompt shipments. Kraft is quotably steady but there is not the pinch of supplies that characterizes most kinds of sulphite and consumers are covering requirements at quoted market prices without trouble. Domestic kraft of standard No. 1 quality is selling at 3.75 to 4 cents a pound and foreign kraft at 1 to 1.25 cents.

**RAGS.**—The market for papermaking rags is steadily growing stronger and sharp advances in prices have been recorded during the past few days. Demand from consuming sources has broadened to a considerable extent, and recent large purchases appear to have reduced unsold stocks of certain kinds of rags to a point where further enhancement of values is likely. The situation in old white rags is rapidly getting into a booming condition. This is apparently due not so much to any unusually heavy demand as to the limited stocks available. Dealers and packers, arguing that they cannot replace holdings at a profit under prevailing labor costs and having light stocks on hand, are insisting on higher prices in almost every selling transaction and evidently are getting the figures asked. Sales of No. 1 repacked whites at 8.50 cents delivered mills have been reported and of No. 1 miscellaneous packing of whites at 8 cents. Thirds and blues are quotably stronger, sales of repacked blues at 4.50 cents delivered mills and of miscellaneous packing at 4 cents being recorded. Roofing rags are firm and moving actively. Quotations in the East are at a basis of \$57 to \$58 a ton f.o.b. shipping points for No. 1 roofing, while Western mills are reported paying \$62 to \$63. New cuttings of all grades are in good demand and tending upward in price.

**PAPER STOCK.**—In company with most other kinds of papermaking material, old papers are moving in large tonnage and at rising prices. The market this week has exhibited a greater degree of firmness than for some time, and, judging from the manner in which consumers are buying and from dealers' reports concerning the difficulties they experience in locating fresh supplies in the packing trade, the advance still has some distance to go before it is halted. Sales of heavy book stock have been recorded at 2.30 to 2.40 cents per pound f.o.b. New York, establishing prices on this grade on a higher level. No. 1 hard white shavings have sold at 5.50 cents and No. 1 soft white shavings at 4.25 to 4.50 cents. Kraft paper has been under brisk inquiry and No. 1 packing of old kraft has readily fetched 3.25 to 3.35 cents a pound New York. Low grades are quotably higher, transactions having been noted in flat folded newspapers at 95 cents per hundred pounds New York and in No. 1 mixed paper at 85 cents. Overissue newspapers are in pointed demand and are hard to obtain in sizable quantities. Dealers are asking and getting 1.30 to 1.35 cents New York for No. 1 packing.

**OLD ROPE AND BAGGING.**—Old rope and bagging rule quotably steady under a fair movement of supplies into consuming channels. Mills are buying these materials in relatively smaller amounts than some other descriptions of raw stock but there is nevertheless sufficient business activity to maintain prices on firm levels. Old No. 1 scrap bagging is selling at 2.75 to 2.85 cents a pound f.o.b. shipping points, and the manner in which numerous dealers are retaining stock indicates that they anticipate an advance in prices. Gumy is in moderate call at a quotable basis of around 3.25 cents. No. 1 Manila rope is selling at 6 cents or a shade lower per pound f.o.b. New York.



This curve, prepared by A. E. Cadwan, statistician for the Canadian Export Paper Co., shows the main reason for the present scarcity of newsprint in the United States and for the strength and trend of the market.

# WOOD PULP TRADING CO., Ltd.

Rio de Janeiro, Brazil.      501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street      Buenos Aires, Argentine.  
NEW YORK CITY

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920.      Quotations solicited.

**BE THE BEST OF WHATEVER YOU ARE.**

If you can't be a pine on the top of the hill,

Be a scrub in the valley—but be  
The best little scrub by the side of the rill;

Be a bush if you can't be a tree,  
If you can't be a bush be a bit of the grass.

Some highway some happier make,  
If you can't be a muskie then just be a bass—  
But the liveliest bass in the lake!

We can't all be captains, we've got to be crew,

There's something for all of us here,  
There's big work to do and there's lesser to do.

And the task we must do is the near,  
If you can't be a highway then just be a trail,

If you can't be the sun be a star;

It isn't by size that you win or you fail  
Be the best whatever you are!

**WILL MAKE WIRE CLOTH.**

A plant is at present under construction at Niagara Falls, Ont., for the Niagara Wire Weaving Co., Limited, a new company in which Mr. Hamilton Lindsay, President of the Lindsay Wire Weaving Co., Cleveland, Ohio, is principally interested. The company is spending about \$220,000 in plant and equipment, and will employ about 150 hands in the manufacture of wire cloth and wire-weaving machinery. The market for these products will be largely in Ontario and Quebec, they being used in pulp and paper mills and other industries.

**GOING TO EUROPE.**

The Canadian Export Paper Company, of Montreal is sending Mr. W. G. Mitchell abroad to make a study of conditions in the pulp and paper industry in Scandinavia, Finland, and Russia.

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ROTARY BLEACHING BOILERS**

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FOR THE PAPER TRADE

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

Published every Thursday by the Industrial and Educational Press, Limited, Garden City Press, Ste. Anne de Bellevue. 'Phone 165.

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'Phone Adelaide 3310.

F. E. Payson, Pacific Coast Manager,  
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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for.

Subscription to an address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

Changes in advertisements should be in the Publishers' hands ten days before the date of issue.

VOL. XVII.

GARDEN CITY PRESS, Ste. Anne de Bellevue, Que.

No. 50

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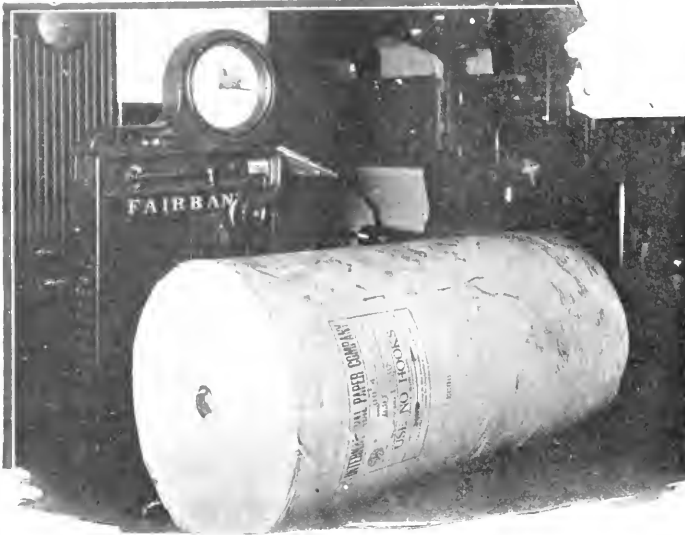
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*Weighing standard roll  
of news print paper on  
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## Cut Time and Labor Costs

—stop and figure out the time wasted in weighing and computing weights. It amounts to considerable in a year.

# FAIRBANKS Dial Scales

eliminate all the waste time and labor it is possible to save. They put your weighing on an efficient basis. The plainly graduated dial does this.

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MONTREAL,  
SASKATOON,  
VICTORIA.





## EDITORIAL

### *A BASELESS RUMOR.*

A silly rumor that is causing much uneasiness in newspaper circles in the United States is to the effect that after the first of January the export of Canadian newsprint will be prohibited in order to supply the Canadian and British publishers. We wish to state emphatically that no such order-in-council has been issued, nor is it contemplated. The Controller has stated that Canadian publishers will be assured of necessary supplies and it is to be expected that British contracts will be honored, but, on the other hand, Canadian mills are entering definite agreements with Americans and will carry them out.

The newsprint consumed in Canada is only about 10 per cent of the production, so our neighbors need not be alarmed about action on this side of the line. They will get what paper is coming to them, but if they don't cut down their consumption the amount available will be decidedly inadequate.

The situation in Canada is largely one of distribution and this will be taken up at a meeting of both parties, called by the Controller for Tuesday next at 2.30 P.M. in the Windsor Hotel, Montreal.

### *A BOOM IN BOXES.*

For a number of years the principal development in the manufacture of paper has been in connection with newsprint and the growth of this branch of the industry in Canada has been truly remarkable. One of the reasons for this has been the fact that the power required and the raw material required have been available in close proximity over a large portion of the area of the Dominion and because the expansion of this industry on the American side in localities convenient to the large consuming centres is practically impossible.

The growth in the demand for newsprint paper is likely to be paralleled to a considerable extent by an increase in the production and the multiplication of uses for boxboard. There are many indications that we are at the beginning of what might be called the fibre container age and the basis for the manufacture of these products will also be found, like newsprint, in the forests and water powers of Canada. One of the most important recent developments along this line is the requirement beginning the tenth of December that packages weighing more than 25 pounds will not be accepted for transportation by the American Railway Express unless protected by a fibre or wooden container. For packages of ordinary weight the fibre box is without any doubt the best container to use. This is true not only of shipments of miscellaneous goods

but even more particularly for standard products. The fibre box is no less useful for freight shipments than for express shipments and the mortality is surprisingly small. In fact an extensive test on a shipment of goods for the American army in Europe showed the loss of only 5.4 per cent of the packages against a usual loss in army transport of 15 or 20 per cent, and a considerable number of these could easily have been sent through to their destinations had there been facilities for making simple repairs, which in the case of the fibre box are often more easily accomplished than with the wooden case. The saving of freight, the saving of space and the convenience and rapidity of handling which are characteristic of the fibre container are all points of considerable importance to both shipper and consumer.

The newsprint mill is gradually coming to supplement the Canadian pulp mill and machines for the manufacture of other grades of paper are also becoming more numerous in the Dominion. These will, of course, convert our pulp, which is an intermediate product into the more valuable finished article in the shape of various grades of paper. Without looking very far into the future it can readily be seen that there is an excellent opportunity developing for an extension of some of the present pulp mills, particularly those manufacturing groundwood and sulphate pulp, into mills for the manufacture of cardboard, fibre board and containers. It is not unlikely that there will be a demand for the various classes of board that will necessitate the erection of new pulp mills to supply the raw material. For the present it is likely that a considerable proportion of these boards will be exported to the United States and Great Britain. In the course of time doubtless other markets will also be developed, in fact large quantities of knock-down boxes are already being shipped to South America.

The pulp and paper industry is not the only one in Canada which is rapidly growing and the development of other industries all have an indirect effect and some of them a direct effect on our own. The one which is most likely to have a considerable influence on pulp and paper manufacturing is the preparation and packing of food products. This includes the enormous fish industry and prospects for important developments also in the export of canned vegetables and both raw and canned or preserved fruits. In addition to this we might mention that the fibre barrel is just coming to be a factor and will in time be an important factor in the transportation of cement, flour, colors and many other products. In addition to these uses for the large fibre container, a few of which have been men-

tioned. There are the machinery uses and the increasing demand for the paper box in its multitude of forms, sizes and finishes.

One of the important factors in the future of the fibre container is the advance that has recently been made in process for rendering the material highly water resistant, if not actually water-proof.

Our remarks so far have been with the fibre container made from wood pulp principally in mind. It would not do however, to disregard other Canadian raw materials which can, and probably will, be extensively used in the manufacture of containers. Enormous quantities of cereal and flax straws are annually destroyed and entirely wasted except for the small value of the ashes as a fertilizer. Straw is extensively used in the United States for the manufacture of corrugated board and boxes and is used there and elsewhere for book covers and bleached straw pulp is used to some extent for the manufacture of featherweight papers. These uses apply principally to the cereal straws. Flax is grown in Europe principally for the fibre which is manufactured into linen textiles whereas in Canada the use is for the seed and the straw is practically neglected and wasted. Tests have shown that this material can be manufactured into high grade papers by careful cooking and bleaching but it is altogether likely that a superior grade of container board, combining both bulk and toughness can be manufactured from a combination of flax and cereal straw. The development of such an industry would not only use profitably much of the waste material from our Western prairies but would furnish an industry to make use of the water power and coal which are available in a number of localities in the West.

The growing demand for paper boxes and fibre containers will not only furnish additional employment in factories for Canadians and their resources but this industry will form the basis for an allied industry to manufacture this material into boxes and we may look for a considerable development along this line. The knock-down box, which is readily converted into a firm, dependable container by the application of a few strips of a tough gummed paper makes it possible to ship the material in very little space and at small expense to any point where it is to be used. Canadian kraft paper is just the stuff for these gummed strips and a new Canadian factory will soon be in operation for making this gummed paper.

It is therefore with great confidence in the possibilities for large developments in the manufacture of box and fibre boards and their conversion that we hazard this forecast of the future.

With Japanese labor agreeing on a 9½ hour day, it is easy to see where we get off unless each man can still do 25 per cent more in an hour than this progressive Oriental.

### COBWEBS.

It is gratifying to note that the new Minister of Education for Ontario is big enough to recognize and adopt many of the points in the plans of his predecessor. Ontario may be expected to lead the Dominion in educational matters under such leadership. The pulp and paper industry is deeply interested and vitally concerned in Dr. Grant's work.

A paper exporter in Montreal could easily dispose of 3,000 tons of newsprint a month. Besides this, there are large calls for kraft and other grades. It is interesting to note that the South American and Far Eastern markets are turning more and more to Canada. It is certainly a misfortune that cannot be overcome that the natural growth of the industry has been so interfered with during the past few years.

It has been intimated that the freight classification of wrapping paper is to be changed and that the change would add three to five cents per hundred pounds to the present rates. It is pointed out that wrapping paper takes up 57-60 cubic feet per long ton while newsprint requires about 80. Nor is wrapping paper so liable to damage. If this is true, it seems strange that this grade alone is moved into a higher class. The discrimination cannot be on a value basis, as wrappings are generally worth less than news and coating stock. If a change had to be made it would seem only fair at least to treat all alike. But why pick wrapping paper to be the goat? Perhaps the railways pity the poor publisher. Of course we know the Government Railways are running behind, financially, and increasing rates is probably easier than increasing operating efficiency.

When so many concerns from other countries, particularly from United States are coming to Canada to establish branch factories it is both interesting and encouraging to hear of Canadian manufacturers extending their operations to other lands. Perhaps the latest instance is the establishment of a wax paper plant in England by the Anglo-Canadian Wax Paper Co., of which Mr. H. B. Hart of the British American Wax Paper Co., Toronto, is managing director. There are certainly great possibilities in the use of wax paper and it is gratifying to see Canadians so far in the lead in making use of this product.

"The Income Tax and the Average Man" is the title of a booklet just sent out by the Royal Securities Corporation, Montreal. Anybody may have a copy and the majority of Canadians will need one, since the lowest taxable income is \$1001, the tax on it being \$.04. It is probably the clearest explanation of this puzzling business that Mr. Average Man is likely to get hold of.

Learn and you lead; loaf, and you lean.

## Thirteen Thousand Brain Power at Your Service

One of the most remarkable propositions that has ever been made for the purpose of improving the possibilities of service to the industries of the country by an educational institution has just been worked out by the Massachusetts Institute of Technology. This action is not only confirmation of the adage that necessity is the mother of invention but it is an important indication of the extensive field that so far has not been thoroughly cultivated and planted with the seeds of pure industrial and education co-operation. No institution is better able to offer this service of consulting engineers than M.I.T. For years known as Boston Tech, with students numbering from a few score at the start only a bare fifty years ago to a student body now numbering 3,100 and occupying the most magnificent and best equipped educational plant in the country, it is no longer simply Boston Tech. The school is now more properly known by its correct name as the Massachusetts Institute of Technology, but even that intimates a restricted field which is quite inappropriate. Just to mention the name Technology almost anywhere in the world centers attention on the school by the Charles.

Technology for fifty years has been supplying the world with the best, unquestionably the best, engineers and scientists and the teachers of countless more scientific and technical men and women. The work of the Institute is the foundation stone, and often the super-structure as well, of very many of the successful business enterprises on this continent, not to mention the labors of her graduates in South America, China, Japan, Europe and Africa. Every industry in Canada and the United States—and the list prominently includes the pulp and paper industry—owes the Institute a debt, not only of gratitude, but also of cash.

It is necessary, pitifully and foreibly necessary, to provide approximately adequate salaries for the instructing staff whose devotion to ideals and duty has been no less than a sacrifice to their own and succeeding generations and an uncompensated contribution to many successful industries. President MacLaurin and his associates have worked out a dignified, businesslike plan whereby Industry may contribute to Education and get more than it gives. Technology graduates cannot give the money that is required, because they haven't enough. Many are already giving beyond their means and in addition they are now ready to give their experience and their ability, if, in exchange, the Institute they love so well may benefit by the exchange of their collective brain power for the coin of industry.

The following letter, which the Editor has just received from President MacLaurin, will explain the plan and it certainly should be received enthusiastically by many concerns in the pulp and paper industry.

"You will be interested to learn that the Institute's Executive Committee has approved a plan and form of contract whereby the industrial organizations of the country may come into the closest association with our Institution.

"The plan in substance is that this Institution shall establish changes in its organization and become a source of information for technical research and knowledge, to advise where special problems requiring investigations, tests or research can best be done,

whether in our laboratories or by outside experts.

"The industrial organizations contracting with the Institute will under proper conditions have the opportunity of utilizing its great plant, the most modern of its kind, of conferring with its technical staff and of availing themselves of its great libraries and valuable technical files.

"Perhaps the most important information which will be available is the record of qualifications, experience and special knowledge of our thirteen thousand and more alumni from which source industrial organizations will be able to learn where to obtain special knowledge and information, and where men can be obtained for special problems or permanent employment.

"In addition, a record will be maintained of undergraduates and of their qualifications and availability for employment.

"Some of these privileges are now open to the industrial organizations of the country but it is now planned to make a business of organizing the resources of the Institute so as to give to industry a more effective service. It will be of great advantage to all concerned to have this service rendered as a matter of business. It will stimulate the corporations to make a greater use of the opportunities that are available and it will put the Institute on its mettle to make sure that the corporations get a real return for the payments that are made.

"It is believed that this plan carried out in a systematic manner will prove of great value to industry in general and at the same time will permit industry to aid in the support of this Institution upon which it so vitally depends for its supply of trained men.

"Yours sincerely,

"RICHARD C. MACLAURIN."

The agreement reads:—

### Industrial Agreement

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Cambridge, Massachusetts

Agreement made this .... day of .... 19.. between ....., hereinafter referred to as the Company, and the Massachusetts Institute of Technology.

The Company agrees to pay to the Massachusetts Institute of Technology a retainer of ..... dollars, in five annual installments of ....., payable on the second day of January of each year from 1920 to 1924, inclusive.

The Massachusetts Institute of Technology agrees to make available to the Company, during the five years 1920 to 1924, inclusive, its libraries and files, and to arrange for conferences with its technical staff on problems pertaining to the business of the Company.

The Massachusetts Institute of Technology further agrees to maintain a record of qualifications, experience and special knowledge of its alumni that shall be as complete as practicable, and upon request to advise and assist the Company to obtain:

Information as to where such knowledge and experience are available.

Information regarding men for special problems.

Information regarding men for permanent employment.

The Massachusetts Institute of Technology further

agrees to maintain a list of undergraduates who may wish positions upon graduation; to advise the Company upon request as to the records and qualifications of these men, and to arrange for interviews with them.

The Massachusetts Institute of Technology further agrees that in case the Company at any time during the period covered by this contract should have special technical problems requiring extended consultations, investigations, tests, or research work, it will advise the Company where this service can best be obtained. If, in the judgment of the Massachusetts Institute of Technology, this service can best be rendered by its staff or in its laboratories, a member of its staff shall undertake such service for a fee to be mutually agreed upon by the parties hereto.

(Signatures.)

### REVENUE FROM INDIA'S FORESTS £1,000,000

Pulp and paper made from bamboo and elephant grass promises to have considerable prospects of becoming a commercial product of immense importance, according to Mr. R. S. Pearson, Forest Economist of the Forest Research Institute, of the Government of India, situated at Dehra Dun, who was visiting Montreal last week.

The chief object of Mr. Pearson's visit was to study methods used at the Forest Products Laboratories of Canada, 700 University street, which are conducted by the Forestry Branch, Department of the Interior, and also to gather information as to the laying out of similar laboratories, purchasing of experimental equipment, and also to gather experts to carry on research in the various departments of forestry.

Speaking on the subject of pulp made from Bamboo, Mr. Pearson, said:—

"One of the investigations that is being carried out by the Forest Research Institute, and which has led to commercial results, was the inquiry as to the value of bamboo for making pulp for paper. It has been recognized for the past ten years that there is a steady decrease of the world's pulpwood supply, and that Canada is the only Country from which large supplies can be obtained for 10 or 15 years hence.

"As Scandinavia and the United States have already depleted their pulpwood resources to practically exhaustion, and India finding it has huge quantities of bamboo, which are now practically a waste product, India is trying to chip in to the huge industry.

"As far as we can see at present India has an excellent opportunity of taking a great and important part in the pulp and paper industry. I am afraid that unless Canada looks after her interests better than in the past, she may find herself in the same boat as the United States, Norway, Sweden and other countries who formerly boasted of "unlimited supplies." There is no such thing as unlimited resources of pulpwood in Canada, much as I would like to believe these boastings.

"By investigation, both in the field of silviculture and in the laboratories, as far as utilization is concerned, every effort should be made to foster this great industry. Canada is said to be the third largest wood producing country in the world,—in fact counting Russia out, Canada is second,—and Canada has a fair chance of becoming first. But we must remember that it is not difficult to drop from first or even third place without measures being taken to conserve the existing forests. And the groundwork for this is research, such as the Forest Products Laboratories are doing,

and should do to a far greater extent. Your Laboratories should receive for greater support from the Government and the commercial industries which they benefit.

"Comparing the work done by the Indian Government, I think we are in the lead. The Forestry Department of India was inaugurated only 60 years ago, and already it has 240,000 square miles of state forests. A large proportion of these forests are intensely worked, and for the remaining part working plans are being prepared. The net revenues are over one million pounds Sterling, and is rapidly increasing year by year. When the problem was first undertaken the forests were not yielding 50,000 pounds Sterling.

"To show how seriously the Government of India takes her forests, Mr. Lecte, the Chief Conservator of Forests of the Province of Burma, was sent over to Canada and the United States two years ago, to study saw-mill and lumbering operations. Now they have sent me, and they propose sending a dozen engineers for at least a year to Canada and the United States, to be trained in logging operations. Both Australia and South Africa have sent men on the same mission as the Indian Government, and I think it is high time for Canada to get a move on. Though your supply of timber is extremely large it is soon exhausted if not taken in hand by capable and scientifically trained men.

"There is no doubt that both the United States and the Canadian Forest Products Laboratories are suffering seriously from the continual change of experts, due probably to low pay. This results in discontinuity of investigations, and interferes with the value of the results obtained. It is a very serious matter to incur the loss of confidence in such institutions by the commercial community. If the commercial community have no faith in the Institution the results of important investigations are largely nullified. The results are also liable not to be accepted by the people to whom they are of greatest value. Personally I am convinced that until the state recognizes that their officials be paid better this state of things will exist. This the Government of India has recognized and we are going ahead to replace our present large buildings and 45 acres, by an immensely larger institution on 1,300 acres of land, and the new buildings and equipment will cost about 400,000 pounds Sterling. The appropriation for salaries of staff will be an additional 25,000 pounds." —M. H.

### THAT STONE FACE.

"Say, that boss is an old grouch," said one employee to another a few days ago in one of the Crown Willamette mills. "Which man do you means?" "Why, that fellow with the stone face," said the first. "Oh, you don't know him," said the second. "He's a fine fellow, one of the boys—not only jolly, but a regular wag and wit."

"Well, then, what does he go around with the stone face for? He looks like a perpetual grouch. Put him on, if you know him."

Now, Mr. Foreman, Mr. Superintendent, Mr. Manager, put on a smile. Most any of you would rather see your men smile, and so would your men rather see you smile. Get the habit of smiling and that stone face will wear out.—Makin' Paper.

It is estimated that if the forests of the earth were completely stocked and scientifically worked, they would yield annually the fuel equivalent of from 30 to 120 times the present consumption of coal.

# Compressed Air in the Pulp and Paper Industry

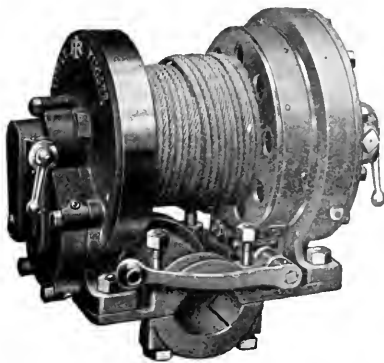
## PART I—HOISTING WITH COMPRESSED AIR

By F. A. McLEAN, Canadian Ingersoll-Rand Co.

(Concluded from Last Issue.)

### Air or Steam Hoists for Hauling.

Due to the manner of suspension and to their short range the direct lift or "Imperial" type air hoists are seldom adapted to pulling or hauling loads in a horizontal position and while they are probably the most suitable for general use in the pulp or paper mill, and are unexcelled for short straight lifts and for transferring material from one building to another, etc., there will often occur many situations in which a highly portable hoist of rugged construction and longer lift could be used to better advantage; such as for hoisting ashes in the power plant, switching small cars, snaking timbers, moving trucks and packages in the warehouse, taking down and erecting piping, shafting, machinery, and general hauling and lifting in construction and maintenance work.



Little Tugger compressed air windlass, set for hauling or hoisting.

For work of this class the "Little Tugger" type will quickly save its cost, as it is light in weight, easily set up and taken down, and may be mounted in any position, overhead, on the floor, bolted to a flat timber, or circular column  $4\frac{1}{2}$  inches in diameter, as may be most convenient. It can be operated by unskilled help and will reduce the cost of many hoisting jobs now being done by hand.

The motive power of this hoist is provided by an engine of the Duke or square piston type, which gives four power impulses per revolution, making the hoist very steady in operation, and as there are no dead centres, it may be started in any position. The engine is readily reversed and is controlled by a small lever on one end of the drum housing. When this lever is pulled forward the load is raised and when it is thrown backward the load is lowered. The reverse may be used as an auxiliary to the regular brake if desired. When the throttle lever is released, it is returned automatically to central position, cutting off the air and stopping the hoist. This control is very sensitive and the hoisting speed may be varied at will.

Power is transmitted to the drum by means of a clutch and gears which are controlled by a clutch lever located on the end of the drum housing opposite the throttle. Cords may be attached to the control levers, if desired, and the hoist operated from a distance. The gears are cut from steel and run in an oil bath which also lubricates the various bearings. The engine is lubricated by oil from a reservoir in the cylinder casting, and the drum bearings are supplied from a large oil cavity in the centre of the drum which only requires an occasional filling.

The brake, which is of the band type lined with "Raybestos," is actuated by a long lever attached to the base of the hoist and operates through the medium of a double screw on which are cut right and left hand threads. With this arrangement the brake will stay in any position in which it is put, either on or off, without the use of ratchets or toggles. The brake is adjustable for wear and the brake lever may be placed in the position most convenient for use in cramped or close quarters, for use in which this hoist is particularly suitable owing to absence of exposed moving parts or projections which might injure the operator. As the drum is mounted independently of the engine shaft, wear and friction from the brake band load are eliminated.

A useful feature in these hoists is the clutch mechanism as it enables one man to operate successfully the hoist for haulage work, as he can leave the hoist and carry the rope to the desired point, whereas in hoists not equipped with this clutch, it is necessary to pay the rope out under power, necessitating the services of two men, one to run the hoist, and the other to carry the rope.

These hoists are obtainable in two styles, for wire or manilla rope, known as the 1-H and 11-H Little Tugger and are supplied for operation on either steam or air. Larger valve clearances are allowed and a lubricator and drain cocks are supplied when it is desired to operate the hoist on steam. Machines intended for operation by steam are designated as 1-HS and 11-HS.

Both styles develop  $2\frac{1}{2}$  horse power and the drum capacity is 700 feet of  $\frac{1}{4}$  inch or 450 feet of  $\frac{5}{16}$  inch wire rope in the 1-H or 1-HS machine and 300 feet of  $\frac{7}{8}$  inch manilla rope in the 11-H or 11-HS size. The 1-H and 1-HS Little Tugger have a lifting capacity of 1000 pounds, and the 11-H and 11-HS style 600 pounds at 85 feet per minute, or smaller loads at higher speeds, on a steam or air pressure of 80 pounds. The 1-H and 1-HS hoists will haul any load where the pull on the rope does not exceed 14,290 pounds on a 5 per cent grade and the 11-H and 11-HS hoists 40 per cent less. The air consumption of the 1-H and 11-H hoists averages about 165 cubic feet of free air per minute when they are lifting their maximum loads at 85 feet per minute.

### Conclusion.

There are only 600 working minutes in each 10 hour day and if a machine and man are forced to stand idle for 6 minutes 20 times a day their efficiency is reduced by 20 per cent and not only is too high a

price paid for non-productive labor, but production is reduced through the enforced idleness of the machine. By the proper selection and location of air hoists this loss can be reduced or done away with.

Figuring on a basis of cost of installation, maintenance, and power consumption, air hoists cost less per year and will stand up to their original capacity and last as long, or longer, than any other type of power hoist at present available.

### INDUSTRIAL UNREST IN JAPAN

Information received from reliable sources indicates that Japan is by no means escaping its share of the industrial unrest so widespread in Europe, America and Australia, according to the Labor Gazette.

Prior to the outbreak of the war there was, generally speaking, no labor problem in Japan, though industrial conditions were marked by long hours and low wages. There were no trades unions or similar organizations. The situation has, however, undergone a radical change. There are now, it is reported, unmistakable signs of the development of a labor movement in Japan on organized lines. During the latter half of July and the early part of August, 1919, an unprecedented series of strikes took place in various parts of the country, particularly in Tokio and its neighborhood. Considerable unrest has been occasioned by the great advance in the cost of living generally, and particularly in such important staples as rice and sugar. This advance was believed by the people to be largely due to profiteering on the part of certain large dealers. A contributory cause was the resentment widely felt among the working classes at the enormous profits received by certain other classes of society during the war period of unprecedented prosperity, and at the extravagant style of living adopted by them, in sharp contrast to the suffering of the workers themselves, whose wage increases were entirely absorbed by the enhanced cost of living.

Reports show that the claims of the strikers in nearly all cases were for increases in wages of from 30 to 50 per cent, though in some instances as much as 100 per cent was demanded. Other questions, such as shorter hours, improved working conditions, a share in profits, etc., are being urged in a lesser degree. In practically all cases a speedy settlement was obtained through partial compliance with the demands of the strikers, and many threatening movements have been anticipated by voluntary concessions on the part of the employers. The employees of the Tokio municipal electric railway were granted an increase of 60 per cent, but otherwise the rates of increase granted do not appear to have exceeded 35 per cent, while in most cases the concessions amounted to from 10 to 20 per cent.

The printing industry was perhaps the one most widely affected by the general unrest. In Tokio a strike of some 1,500 newspaper employees took place to enforce demands for a 30 per cent increase of wages, for a twelve-hour day with overtime to be paid at double rates, for a holiday on Sunday with wages, and for an improvement in working conditions generally. It is noteworthy that the claim for a shorter day was limited to a maximum of twelve hours, tending to show the excessive hours normally prevailing. A settlement was reached after the strike had lasted one week, many of the demands of the strikers being conceded. With respect to overtime a compromise was reached, it being granted that over-

time exceeding four hours in the case of male workers and two hours in the case of females and minors should be paid at the rate of time and one-half, and that bonuses should be granted for regular attendance. It is not stated whether the Sunday holiday, with or without wages, was granted.

Viewing industrial conditions in Japan in their relation to those in British countries, it is intimated that "the ratio of Japanese and British labor efficiency is at the best not higher than 2 to 3, so that if the general demands for an eight-hour day and an increase in wages be conceded, as will perhaps happen, the danger of Japanese competition in the world's markets should be appreciably lessened."

It is reported that there has been formed in Japan an "official" organization under the name of "Kyo-chokwai"—Society for Co-operative and Harmonious Working—for the purpose of adjusting difficulties between capital and labor. The avowed object of this society is the settlement of labor disputes in an amicable and peaceful manner, but it is alleged that its real purpose is to protect the existing form of government and to suppress the growing spirit of Bolshevism within the country.

### PROTECTIVE TELEPHONES IN N. B.

The construction of the forest protection telephone line by the N. B. Forest Service is proceeding very satisfactorily. About 22 miles have been built, leaving 18 more to construct in order to reach the Bald Mt. Lookout Station. It is expected that the work will be completed about December 15th. Since the arrival of snow the transportation of wire and provisions has been rendered much easier. The construction party consists of 7 men and necessary teams Mr. H. C. Kinghorn is in charge. The line is being built in the most modern method of tree construction. The wires are stretched across the road between opposite trees; the main telephone wire is attached to the tie wires by split insulators in such a position that it remains suspended over the centre of the portage and about 15 to 18 feet from the ground, very similar to the method in which a trolley line wire is supported in the middle of a street. The wire is thus kept free from contact with the brush on each side of the portage road. Any overhanging branches are trimmed off with a special tree trimmer which easily removes branches up to 2 inches in diameter. The main line is kept reasonably tight by being snubbed to a tree by a strain insulator once every half mile. Sufficient slack is left in the wire to allow several trees to fall across it and bring the main line to the ground without breaking it or its supports. When the fallen trees are cut out the line springs up to its place. If the main line is not broken messages may be sent over it even if several trees are lying across the wire. Telephones are being installed at convenient points about 10 miles apart. Bald Mt. which will be the upper end of the line, is approximately 60 miles from Newcastle, and when telephone connection is completed the line will be of considerable local value as well as serving the purposes of better forest fire protection. The party working on this line are practically all returned men, including the chief and two linemen. They expressed their keen appreciation of the gift of a dozen pairs of heavy woollen socks recently donated them by the Daughters of the Empire.

Opals are considered unlucky; many men have been known to marry the girl to whom they presented one.

# The Training and Qualifications of Paper Mill Chemists

By E. Sutermeister, Westbrook, Me.

The Pulp and Paper Magazine frequently receives inquiries as to the duties and qualifications of the paper mill chemist. Our contemporaries evidently have had similar questions, for we find the following excellent information in Paper for Sept. 10, 1919.

It was not so very long ago that the paper mill which employed a chemist was a rarity and the manager or owner of that mill was regarded as a sort of adlepted philanthropist or even worse. At that time paper was being made and sold at a profit by men who had learned the art from their fathers and grandfathers, so what was the use in taking up newfangled notions. Gradually, however, conditions in the industry changed, profits diminished and competition increased; customers became more fussy in their demands, and papers which were formerly considered perfectly satisfactory were now pronounced entirely worthless for the printing of certain grades of work. The complexity of the situation was still further increased by the introduction of mechanical and chemical wood-pulps and other fibrous raw materials, as well as by improvements and innovations in the printing industry, all of which demanded improved papers with certain properties emphasized to bring out particular features in the final print. All of these factors exerted their influence in the same direction and the result has been that more and more mills have come to rely upon chemical knowledge for the solution of many of their difficulties and now it is the rule, rather than the exception, that any progressive mill will have a chemist, or a corps of chemists, or at least will retain the services of a reputable consulting firm.

## Points on Training and Qualifications.

The problems relating to the establishment of a laboratory have been discussed by many writers and from numerous points of view but comparatively little is usually said about the problems which the chemist will have to solve or about the training and qualifications which he should have. These points are frequently brought up by students and young men who are interested in the industry and expect to make this phase of its technical side their life work and it is always difficult to give them a satisfactory answer. The following notes are the outcome of an attempt to review intelligently some of the points which experience has proved to be important, and to give the young chemist a slight idea of the scope of the work which he will have to undertake.

A short time ago the writer was asked why a paper mill needed a chemist; the speaker could not see why chemical knowledge was necessary in the making of such a simple thing as a sheet of paper. This is the attitude which has tended to delay progress in the industry and which it has been necessary to combat in order that the chemist might be permitted to contribute his share toward its advancement. Very fortunately it is now generally recognized that a chemist can be of some use in a paper or pulp mill and if he is the right sort and is given proper support his services will be of great value.

## Testing Supplies and Raw Materials.

In the comparatively simple matter of testing supplies and raw materials there is a very broad field for the wike-awake man. A brief review of some of the materials used in pulp and papermaking will show the

scope of such work: for the sulphite mill there are sulphur and lime or limestone and in some cases pyrites; the soda mill uses lime, but in a different way, and also soda ash. Both mills use wood, and if making bleached fiber they will use bleaching powder or its equivalent. In the paper mill there are clay, rosin size, alum, colors and occasionally other materials such as sodium silicate, starch, glue, etc. If the plant also makes coated paper there are included in the raw material list casein, glue, starch, satin white, blanc fixe and a good many odds and ends which may be used from time to time for special purposes. The boiler house and mechanical department add coal or fuel oil, lubricating oils and greases, belting, metals and alloys and innumerable other things. Now the testing of many of these materials is not confined to a simple analysis, in fact many are not analyzed at all, as such a procedure would throw no light upon their relative value, yet all must be tested in some way which will tell the superintendent whether he is getting standard materials to work with.

## Changes in Raw Materials.

Going one step further in the manufacture we have the raw materials undergoing changes of all sorts which have to be watched to see that uniformity is maintained. As an example, consider the case of sulphur which is burned to sulphur dioxide, which is in turn absorbed in milk of lime, or by limestone and water, to form the cooking acid for the sulphite process. This entire process must be carefully watched and constancy of results maintained for if variations of too great magnitude occur a poor "cook" is likely to be obtained which may cause the paper made therefrom to be down in color, or tender, or full of shives. Similarly the lime and soda ash in the soda mill are converted into caustic liquor whose strength must be kept constant in order to insure good cooking results, and at the same time the best possible utilization of both lime and soda must be assured as well as the lowest possible loss in the waste sludge.

## Where Lack of Chemical Training is a Handicap.

Neither of these lists is anywhere near complete, nor could they be made so within the scope of this paper, but they illustrate the type of work which might perhaps be classed as routine tests and analyses. The tests are however not so cut and dried that they can always be safely entrusted to a man who has been trained to do them parrot fashion. If this is done the very points which are likely to lead to improvements, either in methods of testing or in manufacturing, are likely to be overlooked. In many mills such tests are carried out by a boy or young man selected from the mill workers because of his apparent ability, and if the selection proves to be a good one very good results will follow. If he is as wide awake as he should be, however, there will often be times when his results will appear to him to be abnormal and then his lack of chemical training will be a great handicap to him, and to the mill, unless he has a well trained chemist to appeal to for explanations.

## The Field of Work.

In addition to such routine, or semi-routine, tests there is another very large class which is more or less of a research nature. Such work cannot possibly be

initiated by a routine man, nor can it be carried out by him after it is planned, except in so far as parts of it can be laid out in sufficient detail to enable him to follow every step exactly. Even then it is apt to be found that some step was not so fully explained as it should be, the assumption being that the worker knew how it should be done, and that a part of the work has to be repeated if all of the desired results are to be obtained. There is no limit to the field covered by such work. It includes practically all of the problems relating to the determination of the efficiency of processes and the improvements which can be made and also the investigation of new processes or suggested new materials to see whether it is worth while to change. In most of this work there are no beaten paths to follow and the chemist is obliged to lay out his own plan of attack to correspond to the problem in hand and the results desired. This adds to the difficulty of the work but also makes it intensely interesting. It puts the worker on his mettle, gives him a spirit of rivalry or competition and rewards him with a satisfied feeling when the obstacles have been overcome and the desired result achieved.

#### Scope of the Problems.

This particular semi-research phase of the work is the part which keeps it from being drudgery; if one never knows what he is going to be up against when he goes to work in the morning he has got to be alert and ready to tackle any kind of a problem. A brief review of a few of the problems which have come under the observation of the writer will give a slight idea of the scope of such work. For lack of space these can only be listed by title:

- Studies of the rosin sizing of papers.
- Greases and graphite lubricants.
- Experiments with acidproof irons for sulphite work.
- Tests of various fillers.
- Studies on the effect of humidity on papers.
- Investigation of frothing in beaters and coating mixtures.
- New fibrous raw materials for papermaking.
- Methods of purifying brine.
- Studies of causticizing operations.
- Tests of multiple effect evaporators.
- Tests of the durability of papers.
- Packings to be used in a sulphite mill.
- Studies of the rate of growth of spruce and poplar trees.
- Investigations relating to the testing and use of casein.
- Examination of defective electrical insulations.
- Studies of pulp-washing problems.
- Tests of efficiency of waterproof wrappers.

This gives but a slight idea of the variety of questions which will be put up to the chemist after he has once established a reasonable reputation. It is really astonishing how much he is expected to know, and anyone is likely to ask him any sort of a question from the best cure for warts up to how to make sulphite fiber without sulphur.

A third class of work is that which may be regarded as of a strictly research nature. While the dividing line between this and the last class is somewhat vague yet there is a difference which cannot be overlooked. Such problems as the utilization of waste soda and sulphite liquors, or the preparation of useful materials from by-products can be regarded

only as research problems. Pulp and paper-making offer comparatively few opportunities of this nature and they are such that they cannot be undertaken by any small mill with a moderate output.

#### The Qualities and Training Required.

So much for the work which a paper mill chemist is likely to have to perform:—the next question is regarding the qualities and training which will enable him to do it successfully.

Considering the routine man who learns to do his work by rule-of-thumb methods it may be said that honesty, industry, and a reasonable amount of manipulative ability are the prime requisites. A little chemical knowledge will do no harm but it is not a necessity, as anyone, with a little patience on the part of the instructor, can be taught to make weighings, test acids and alkalis, read burettes, hydrometers, etc. The honesty of one doing this type of work should be absolutely beyond question, for the very nature of the work makes it impossible to check the results without repeating the tests. Again in the case of the collection of samples, which is often delegated to the routine man, his reliability must be certain, for a dishonest man could more easily take one large sample from one package than collect a composite sample from say, forty individual packages. Dishonesty along these lines is of course detected sooner or later but in the meantime important deductions are likely to be made on insecure foundations.

The routine man must of necessity be industrious for he usually has enough to keep him pretty busy. Here again honesty enters, for a good part of his work is often done where he is not directly under the observation of his chief and he can, if so inclined, spend more or less of his time loafing in various parts of the mill. The factor of industry may be construed as including that of speed and reliability. One cannot be considered industrious who works very rapidly but also so carelessly that he has to repeat much of his work. There are many who mistake rapidity of motion for efficient work and such should have no place in the handling of routine tests. While speed is quite desirable it should never be obtained at a sacrifice of accuracy; it is safe to say that one test well done is better than any number which cannot be relied upon.

One of the best qualifications which a candidate can have for the position under discussion is the possession of so called "horse sense." Some will do their work well and quickly but at the same time greatly reduce its value by failure to see wherein the tests are abnormal. One who goes to his chief and calls his attention to such results adds greatly to the value of his work, because he enables rapid adjustments to be made when processes need correction. This habit of watching his tests, noting how they differ from the ordinary, and thinking what such differences mean is one of the most valuable assets for a routine man and one possessing such ability should be treasured accordingly.

For the second class of work, that including much of a research nature, a very different type of man is needed and his training must be very thorough and of as broad a nature as possible. Such training can be obtained only in one of the best colleges or universities and usually by the expenditure of four years of time. To employ any one for such work who has had less training is to invite disappointment, but on



the other hand simply giving the work to a college man does not by any means insure its success, since many graduates do not have the necessary qualifications.

It is an unfortunate fact that the average college graduate is a pretty "green" specimen and that his training is defective in many ways. If he has a thorough foundation in analytical chemistry, in the properties of the elements and their compounds, and has also a knowledge of where information is to be found and the best means of digging it out that is about all that can be expected and it will enable him to build upon a fairly secure foundation.

As in the case of the routine man the chemist should be absolutely honest and reliable. There are many cases where the evidence can be presented in two ways and there is great temptation to so present it that it makes a good case for one's employer. Usually, however, there are little indications which make it appear more probable one way than another and these should never be minimized or concealed because of any such desire. There are a good many disputes regarding the quality of goods delivered, in which the chemist will take part, and it does not promote good feeling or a sense of fairness to find that he is always on one side regardless of the evidence. He should regard it as his duty and privilege to present the facts in every case, for it is only by facing the truth that any substantial progress can be made.

#### Mistakes of the Young Graduate.

The question of disputes leads to a consideration of the accuracy and care required in commercial work. Too often the young graduate starts with the idea that "any old thing will do." This is one of the greatest mistakes he could make and unless it is at once corrected will lead him into endless trouble, for it will cause him to draw unjustified conclusions which may be very expensive later on; will result in the rejection of perfectly good materials which will later have to be accepted with apologies, and will ultimately give his superiors a feeling of doubt regarding all his work. When this stage is reached his usefulness will be at an end. It is perfectly true that part of the work need not be of the highest accuracy because the results do not demand it, but much which is done must be of fully as high a grade as that done in any college laboratory. The chemist who habitually holds himself up to this grade of work is in a position to command the respectful attention of anyone who is inclined to doubt the results of his work and ninety-nine times out of a hundred he can win his case. It also keeps him in such good training that he is better able to handle the very accurate cases which come up, and some of them involve work which has proved puzzling to many a college professor. On the whole too great accuracy is much safer than too careless work and it can be attained without the expenditure of very much extra time.

#### Knowledge of Apparatus and Equipment Necessary.

Ingenuity is a quality which will make any chemist much more valuable. Many times he will be called upon to work out new methods of testing, or to conduct tests under abnormal conditions, and his ability to get results under such conditions will not only give him a feeling of satisfaction in his own accomplishments but will eventually win him promotion. Ingenuity along such lines cannot be attained without a comprehensive knowledge of the apparatus and equipment used in other industries as well as a very

intimate acquaintance with the processes of pulp and papermaking. The chemist should therefore seize every opportunity to become familiar with other industries, even though they may have no direct bearing on his own, for bits of information picked up in this way will be continually turning up at the right moment to help in the solution of some difficult problem.

#### Cultivate Observation Through Reading Detective Stories.

Referring once more to the college training of the average chemist there are one or two points in which he is generally totally lacking. Possibly these cannot be inculcated in his course through college but it would probably be worth while to try. The most important of these is the study of human nature, or the mental and emotional characteristics of his fellow mortals. The average young man is generally unable to see why different personalities require different treatments in order to make them respond but if he could start his work with that principle firmly fixed in his mind he would be saved much trouble. Another suggestion for training along a totally different line would be the inclusion of a comprehensive course of reading of detective stories, especially the Sherlock Holmes stories by Conan Doyle. Such tales lay particular emphasis upon careful observation and scientific deduction of facts, and they cannot fail to be of immense value to the chemist who has to dig out the obscure reasons for quite obvious phenomena. This suggestion may seem fanciful to some, but the writer knows that in his own case the information gained from an early and comprehensive course of Sherlock Holmes has proved of very great value in after life.

The mental attitude of the chemist toward his work has an important bearing on his failure or success. As in all other lines of endeavor if he regards his work merely as his "meal ticket" it will prove to be that and nothing else. If, however, he develops a pride in his "job" and endeavors to turn out high class work largely for the satisfaction of knowing that he has done well, then he is almost certain to be a success. Even if this procedure does not win him promotion fast enough in the situation he occupies he will find it of great value in enabling him to obtain a better position.

#### Truth is the Talisman.

As already noted the whole effort of the chemist should be to bring out the truth and he should undertake his work with an absolutely open and unbiased mind. In starting any investigation he may have some idea of how it is going to turn out and what he is going to prove but if he gets this so firmly fixed in his mind that he cannot accept results contrary to his expectations his work will be of little value. The paper industry in particular seems to be one in which it is extremely difficult to obtain concordant results and for this reason the unprejudiced mind, with its ability to weigh and carefully classify evidence is the one most likely to be successful in this work.

Another requisite for the success of the chemist is the ability to co-operate with all kinds of people. The stand often taken by the mill operatives is that they have made paper a good many years without a chemist and that they do not need his help now. Opposed to this is the opinion of the young chemist that the unscientific, rule-of-thumb methods used in the mill are obsolete and that if he is only given suf-

chemist may he will promptly revolutionize the industry. There is more or less truth in both of these. And if the chemist does not possess good sense, the period of adjustment before his work will be long and will have much effect on mill operations. It is only when the study of human nature comes to the chemist, as strongly and if the chemist is at all successful in this line he will gradually win over those who are at first opposed to him or at least doubtful of his ability to help them. Until this is accomplished he is of value only in strictly laboratory work, and his cooperation of the mill hands is absolutely essential. Many tests made on a manufacturing scale are not approved of by the chemist they are very apt to do something to his test which makes his results valueless. Even if they do not show active opposition they are pretty sure to withhold information which might make his test more of a success and many a one of them goes off to start a good laugh among his fellow workers by telling about the "fool mistakes" the inexperienced chemist made. The only means of preventing such a situation from developing is to instill into the chemists mind the simple idea that until he has gained considerable experience in manufacturing lines his best policy is to keep his eyes and ears open and his mouth shut unless he opens it to ask questions. Unfortunately very few young graduates have the self-restraint necessary to carry out this course so that in most cases a period of friction is pretty sure to intervene before the chemist becomes a really useful member of the organization.

From a consideration of the desirable characteristics which the chemist should possess it would seem that he must be a sort of super man" and that it would be impossible to find one who would fill the specifications. As a matter of fact, very few have all the desired qualifications and it is usually a question of selecting the most likely candidate and by patient work helping him to develop along those lines in which he is most conspicuously weak. Given such a policy and a willing and intelligent candidate and the result will be a chemist who will be of great value to the paper manufacturer.

**OVERCOME BY FUMES AT PAPER FIRE**

London, Dec. 4.—Twenty-five firemen were overcome by fumes in a big paper warehouse fire in South London today. They were dragged unconscious from the building by their comrades. Six men were sent to a hospital in a serious condition.

**GREAT LAKES PAPER CO. WILL PAY \$1,000 TAX**

The Township of Shuniah, a suburb of Port Arthur, Ont., will be the actual location of the new mill of the Great Lakes Paper Co. The township will receive an annual property tax of \$1,000 for 20 years. This does not include school or local improvement taxes.

The company will start with two machines, making 2,000 tons of newsprint per year and later add two more. When these are in operation the total will be four up to six. About 550 men will be employed at the start.

It is estimated that one of the Peruvian rain trees will give an average yield from nine to ten gallons of latex per day.

**WILL IT HAVE AN EGG-SHELL FINISH?**

The Odell Poultry Supply Corporation of Decatur, Illinois, is a new comer in the industry that has just Egg Cartons, and a new type of packing board. The authorized Capital is \$700,000.00.

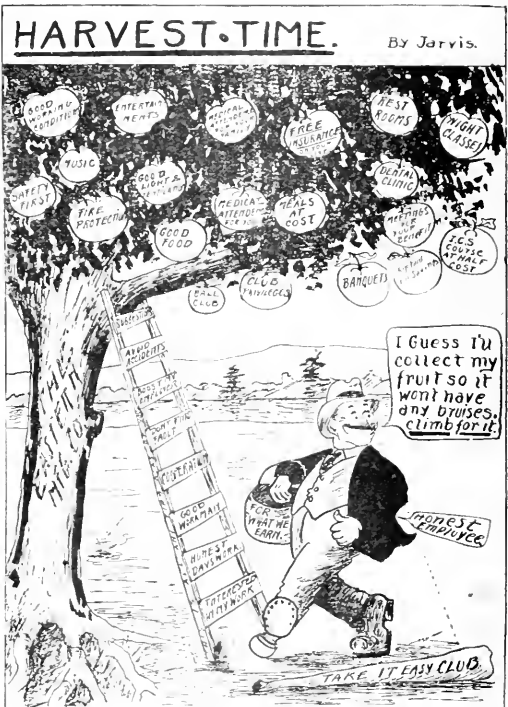
The Corporation controls several Patents on improved types of Eggs Containers, Parcel Post Packages, Egg Cartoons, and a new type of packing board. The company proposes to manufacture these patented articles and also expects to do a jobbing business and will manufacture corrugated boxes. The company also proposes to operate a box board mill with a capacity large enough to supply it with all the board it will require at the beginning of operations.

The management states that there are many details of organization yet to be arranged and announcement will not be made until later of its permanent officers and directors. It is understood that a number of business men well known in the trade will be on the Board of Directors and manage the company's affairs.

The management states that the new egg containers it will manufacture will eliminate practically all of the loss in egg handling brought about through breakage, leaky eggs, etc. The location of board mill and factory has not been announced.

Mr. W. T. Seibels, ex-business manager of the National Poultry, Butter and Egg Association, is a director and First Vice-President of the new corporation.

As Uncle Eben says, "It's better to agree with a man as much as you kin. It makes him feel good natured and you don't have to listen to so much talk."



Courtesy of "The Mill" (Eastern Mfg. Co.)

## BRITISH TRADE NEWS

(From our London correspondent.)

Building operations having ceased during the years of the war it looks now as if the papermakers and makers of boards will have to solve some problems to supplement the ideas and inventions of pioneers engaged in dealing with the shortage of houses and dwellings. In England today there is talk of paper houses at £260 each. The Premier of England has plans of these houses already before him and I find that the buildings have ordinary foundations with walls constructed of double sheets of papier-mache, which are stayed by tubes of papier-mache disposed at suitable intervals apart and set transversely between the panels of papier-mache sheets. The frame work is iron carrying the roof and slates, and it is fully anticipated the houses will meet the requirements of the Ministry of Health. If this new venture is not condemned, the inventions will undoubtedly open up new inroads into the paper and board industry and will once again set the mill chemists and engineers busy to meet the new elements. Mr. F. Shapley, of Bristol, is already at work on the new idea in England.

### Paper Dealers' Dinner.

The paper dealers, stationers, and kraft men, held their first little dinner, since war broke out, the other night and Mr. W. J. Whyte, of Messrs. Edward Lloyd, Ltd., presided. The President gave the dinner the finishing touch when he observed that round the tables they found men of every class of paper rubbing their shoulders together. Mr. Whyte is retiring from the Presidency and at the end of the year he retires from Messrs. Edward Lloyd, Ltd.

### In Bankruptcy.

The ravages of war on industries were echoed in a small hearing that came up before the London Bankruptcy Court this week when a promoter of companies, Mr. Alfred Harvey, Regent Street, S. W., stated that his insolvency was attributable to the liquidation of Flax, Ltd., registered in Canada, and Oil Processes, Ltd. In the former he had 4,636 \$100 shares and owing to the outbreak of war his income derived from these sources was cut off. The debtor's liabilities amounted to £34,281.

### To Be Married.

Next week the second daughter of Mr. F. E. Beeker, head of the firm of Messrs. Beeker & Co., Ltd., the importers of Canadian wood pulps, will be married in London to Major Matthew Hay, a son of Professor Hay, of Aberdeen University. Much interest is being taken in the social event among pulp and paper. The bride is at present living at the Donside Mill, near Aberdeen.

### Pulp Prices Soaring.

The market here is hardening. Sulphite, sulphate and soda pulps are changing hands on higher levels and sellers of sulphite have disposed of a large portion of next year's production. Moist groundwood is also being quoted at higher prices. News sulphite is up to £27 a ton, easy bleaching £32 and bleached to £38.10. Moist groundwood is £8.55. Transport is one of the difficulties still to be contended with and if this element is not closely watched a mill will find itself in difficulties. Papermakers are making efforts to keep pulp prices down among all grades, but sell-

ers are very firm as they have many troubles such as the high shipping rates, scarcity of tonnage and the ever increased cost of production. During the past 10 months Finland has sent some fair supplies to relieve the market.

### Paper Outlook.

The paper mills of the United Kingdom are enjoying a busy time and competition is now being felt. This is to be seen in prices, the North differing from the South. Newsprint remains unchanged. There is a big demand for kraft paper and prices are high. As the economic position in this country is being brought more into line with that of pre-war days; there is a stronger demand for more paper and the outlook is very good for mills and dealers. Indeed, some dealers have already booked up orders to the end of 1920 for kraft and fine grade papers. Of newsprint there are ample supplies owing to recent large shipments. Photographic paper is much in demand and new plant is, in one instance, being laid down to cope with the market. Newsprint is selling at 6 to 8 cents per lb. according to the source of supply.

### Americans Look Round.

It is surprising the number of American inquiries that are reaching England for various grades of papers. They are also after waste papers and other raw materials. In some cases Americans are making tours here in order to survey the markets and see for themselves how matters stand. Vast quantities of China Clay are also going to the States. During the past month the exports of fine printing and writing papers to the States have considerably increased, particularly in the case of printings.

## BRITISH PAPER TRADE FIGURES

Throughout the newspapers here announcements are made that Messrs. Price Brothers are starting up a new mill. Some of the papers comment very lucidly on the new scheme and among them I will quote the "Westminster Gazette," which says: "It is announced that a firm in Canada has decided to put down mills capable of manufacturing about 3,000 tons a week of newsprint. The message will be welcomed everywhere, for anything that promises to give relief to the present situation in regard to newsprint is a 'Godsend.'" If Canada can do anything to reduce the prices the Colony will render a public service. It was characteristic of the present Government that after the armistice it should have appointed a committee to consider what should be done to prevent the British market being flooded by cheap paper. On that committee the paper-making interests had a majority, and naturally it was found that time was required to enable the British Mills to accommodate themselves to world conditions. The time was given, and when the restrictions were removed prices were raised, and the English mills were still unable to meet the demand for British paper. Prices show no symptoms of falling, and will not until we get new sources of supply. As usual after such inquiries, the protection was given to people who required no help and the real victims were put at the mercy of the interests." Here Canadians have an editorial comment which is worthy of consideration, because it emanates from the monied classes and from a source which is usually in support of paper makers of the United Kingdom.

### British Imports of Newsprint

The Trade Board figures for October show a considerable increase in the imports of paper. During the month newsprint was received to the extent of 10,669 tons as against 701<sup>3</sup>/<sub>4</sub> tons in Oct., 1918) the total for ten months being 78,247<sup>3</sup>/<sub>4</sub> tons, compared with 12,761 tons for the same period last year. Unreeled paper arrived to the extent of 1,649 tons (as against 775 tons in Oct., 1918) and for the ten months the figures are: 9,716 tons 18 cwts., compared with 8,646 tons in 1918. Wood pulp board shows a big increase in the arrivals for October—5,879<sup>3</sup>/<sub>4</sub> tons being imported and for the ten months 35,818 tons as against 12,436 for the corresponding period in 1918. Newfoundland is at the head of the list for newsprint.

### Newsprint Sources

Taking all the imports, newsprint, paper-hangings, packings and wrapping, mill and wood pulp board, the imports and exports were as follows, together with the figures for 10 months:

	Oct.	Jan.-Oct.
Imports (tons) .....	50,984 <sup>1</sup> / <sub>2</sub>	273,581
Imports (for 1918) .....	7,236 <sup>3</sup> / <sub>4</sub>	91,488 <sup>3</sup> / <sub>4</sub>
Exports (tons) .....	4,354	34,149
Exports (for 1918) .....	2,311	24,760

The chief sources from which newsprint is received are as follows, and the values for the 10 months:

	cwts.	£
Sweden .....	260,552	435,539
Norway .....	211,008	364,994
U. S. A. ....	63,970	95,232
Newfoundland .....	558,330	905,734
Other countries .....	471,096	665,006

During October last shipments arrived as follows:—Sweden, 34,959 cwts.; Norway, 39,901 cwts.; U. S. A., 17,093 cwts.; Newfoundland, nil; other countries, which include the supplies from Canada mostly, 121,346 cwts. Unreeled paper was received to the extent of 1,649 tons in October (as against 775 tons in Oct., 1918) and for the ten months 9,712 tons, compared with 8,641<sup>1</sup>/<sub>2</sub> tons in 1918. The chief sources of supply were Sweden, Norway, Belgium and U.S.A. During 1918 Canada sent 7,069 tons of wood pulp and mill boards, compared with 8,490 tons in 1914.

### Exports to Canada

The exports of the British mills to Canada during October and for the 10 months were as follows:—

	Oct.	Jan.-Oct.
Writing paper .....	49 cwts.	163 cwts.
Printing paper .....	148 cwts.	348 cwts.
Other papers .....	81 cwts.	1,020 cwts.

There is a material increase in the exports of paper from here to the Dominion. France, India, Australia are among the best markets for the mills of the United Kingdom. During the past 10 months the value of the exported paper to Canada reached £11,163. Of pasteboard, millboard and cardboard, made in mills here, Canada last year only received 27 tons as against 134 tons 11 cwts. in 1914.

### Pulp Imports

Shipments of pulps to the British buyers have considerably increased, the arrivals being as follows, in tons:—

	Oct.	Jan.-Oct.
Chemical Pulps .....	42,911	305,197
Ground Wood .....	55,077	453,771

The value of the chemical pulps for the ten months is recorded at £7,838,902 as against £7,332,993 in

1918) and for the ground wood £4,274,853 (compared with £3,055,320 in 1918).

Ground wood was received from the following countries during the past 10 months:—

	Oct.	Jan.-Oct.
Sweden .....	7,757	76,876
Norway .....	17,587	246,790
Canada .....	—	81,814
Other countries .....	—	16,600

It will be seen from these figures that in ground wood supplies Canada is occupying a prominent position and Norway is today her greatest competitor. Sulphite is arriving from Russia, Sweden, Norway, Canada and other countries.

### Notelets

Ground wood is active at recent quotations.

A French decree has been issued here stating that the prohibition of the import of paper and newsprint is rescinded as from November 18.

The announcement that newsprint is scarce in America was received with some diffidence here. One has only to look at the imports of paper here from America each month.

Col. W. W. Murland, D.S.O., has left for Canada. He contends that we are not producing enough paper.

Brunner Mond & Co. are paying a dividend at the rate of 10 per cent per annum. They are starting a new works for their ammonia soda process.

In October 19,234 tons of China clay was exported to U.S.A., Canada and other places, compared with 18,818 tons for the same period in 1918.

The Wall Paper Manufacturers, Ltd., have made a profit of £336,614. They recommend 8 per cent dividend on the ordinary shares with 2 per cent interim already announced, making 10 per cent for the year.

Messrs. Pirie's Photographic Paper Co., Bucksburn, Aberdeenshire, are erecting a new mill.

Social evenings among mill hands are now being encouraged and promoted amongst the British mills. It used to be annual dinners and dances.

The British paper mills are now free from labor troubles. Everybody is busy and the three-shift system is giving more employment.

### BRITISH EMPIRE TIMBER EXHIBITION NEXT YEAR.

The Senior British Trade Commissioner in Canada and Newfoundland is informed by the Imperial Department of Overseas Trade in London that the department is organizing an exhibition of timbers grown within the British Empire, to take place in London from 5th to 17th, July, 1920.

It is proposed that the exhibition should include:—

- (a)—Specimens of timber (polished and unpolished).
- (b)—Timbers used as flooring, panelling, etc., furniture, ply wood and woodenware generally.
- (c)—Wood pulp.

The principal object of the exhibition is to bring prominently before the users of timbers the full range of those grown in the British Empire and to demonstrate the chief uses to which these may be put.

Safety, like table manners should be taught early. —Safety begins at home.

Trees are being systematically planted along the great wall of China. Good for China!

## Why Is A Beater?

We have here a second reply to letter of inquiry entitled "Why is a beater?" Are there any more replies? Some questions are still unanswered.

The Editor,

"Pulp & Paper Magazine of Canada,"

Dear Sir,

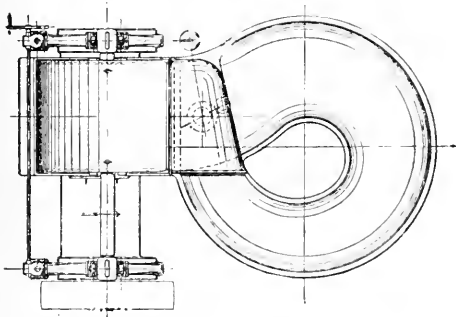
I have just read with much pleasure—in your issue of October 9th—the "Fool Questions" which to my mind contain a good deal of wisdom.

The history of the beater is old and long; the beater, itself, is one of the few appliances which has survived almost in its ancient shape.

In many Canadian and U. S. A. Mills, beaters are now merely Cinderellas, and just barely tolerated as a more or less useless go-between, between the Jordan engine on the one side, and the mixing chest on the other.

In other mills the process which goes on in the beating engine is looked upon as something occult, which must not be disturbed if the quality of the paper is to be maintained.

Considerations such as these are likely to be responsible for the flat bottomed, rectangular packing-case shaped, beater trough, and the survival of the ancient beater form.



The cutting of the fibres between the revolving roll and the bedplate is, however, not the only object of a beater, and if nothing else except the cutting were done, it would be difficult to make wet papers, or, in fact, anything very different from blottings, filterings, and the like.

The rubbing of the fibres—during the circulation in the beater—against each other, and against the beater walls, gives a very pronounced effect.

The remarks of your "Young friend" appeal to me very much, perhaps because I am an old hand at the game.

I send you, separately, 2 blocks with which you may care to illustrate the remarks I propose to make, concerning a new beating engine, in which only the roll and the bedplate of the old Hollander have been retained, but which in all other respects is thoroughly modernized on scientific principles, and I therefore trust it will find favor even in the critical eyes of your correspondent.

The trough of the new engine is circular, and thoroughly dished in all its parts.

The beater roll of large dimensions carries the stuff right over its apex, whence it falls steeply into the trough channel.

This simple device does away with the waste of power, in deflecting the stuff from its natural course by a doctor, to force it at an unnatural angle over the backfall. It also permits making use of a head equal to the entire diameter of the roll, to accelerate the speed of circulation.

The results of this application of scientific principles are astounding, and I am sure will almost seem incredible to many experienced paper makers.

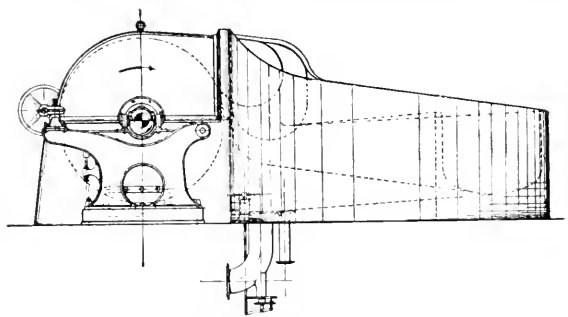
I hope to find an opportunity soon of placing one of these beaters in a Canadian mill, where the people who come from Missouri can see its effects for themselves.

This new beater was worked, in my presence, with a dry stuff consistency of 17 per cent, although 14 per cent to 15 per cent dry stuff consistency is the average.

Your "Young friend" undoubtedly knows, that 4 per cent to 6 per cent dry stuff consistency is at present usual in the average beater.

The speed of circulation in the new beater—measured by myself—with 15% dry stuff consistency had been well over 55 ft. per minute, partly due to the circular and dished form of the trough, and partly to the large diameter of the roll and the efficient utilization of the power.

It is a revelation to see the work of this beater, and I might almost say that a positive leap of the stuff takes place in it, as against the slow action of gravity



in the old Hollander.

The length of the trough of the new engine is materially shorter than that of the old one, while the roll is larger. For instance, in an 1100 lbs. engine it is 67 inches dia., so as to give a fall of 5 ft. 7 inches over the short distance which the stuff has to pass through, from the apex of the beater roll until it reaches the bedplate again.

The natural result is a largely increased output of well beaten stuff, in a materially reduced time.

Your correspondent will also see that the mixing action in this beater must be most energetic, because the stuff is, on each of its journeys round the trough, forced to pass from the outside to the inside wall of the trough.

If a canister of the slowest mixing earth colour is carefully dumped into any single spot in the beater, it will be found to colour the whole of the contents of a 1100 lbs. engine, absolutely evenly and uniformly, in less than five minutes.

The beating operation is one of considerable interest and importance to the paper making industry, and that is my excuse for venturing to take up so much of your valuable space.

ROBERT J. MARX, London.

### BRITISH DARE CONSERVE PAPER

A clear warning to newspaper publishers on this side of the Atlantic about the prodigal consumption of paper was uttered by Mr. George F. Steele, president of the Canadian Export Paper Company, Limited, who has just returned from a visit to the Old Country that was just as brief as it could be, since he only spent two days on that side. "There is a world shortage of paper; everywhere it is the same tale," he said. "There is plenty of opportunity to sell paper, but the difficulty is to meet the demand. Publishers on this side will have to face the situation; otherwise there are going to be some suspensions of papers very soon if they don't take warning."

As to the situation on the other side, Mr. Steele frankly said that in the compass of so short a visit he could scarcely be expected to have had time to take much stock of things. He admitted that the English newspapers which during the war had shrunk down to two or three pages owing to the great dearth of paper, had begun to grow again, and that he saw over there a copy of *The Times* which was a forty-page issue. "The English publisher seems to show some good sense and sound judgment, because he does not attempt to drive his automobile at sixty miles an hour," which figure of speech was taken to mean that the American publisher is using up all his material without any regard for the future famine. Mr. Steele told of a statement made to him by a Winnipeg editor who on returning from the other side had declared that "it was a disgrace and a humiliation to find out how much better the British publishers handled their business than the publishers on this side of the Atlantic."

### The Advertisers

The explanation offered by Mr. Steele of this better management on the other side was that the English publishers were not afraid of the advertisers, but faced the situation resolutely by not hesitating to put up advertising to a rate of a dollar a line in order to make up for reduced space. Apparently the advertiser was not thereby driven away.

Regarding prices, Mr. Steele said the price in London was about eight cents per pound, and in the first half of next year the price to the United States consumer would be four and a half cents the pound.

### AUSTRALASIAN STEAMER LINES WOULD HELP PAPER MILLS

For the purpose of inaugurating steamship service to Australia and New Zealand from Vancouver under the auspices of the Canadian Government Merchant Marine, and for studying the possibilities for establishing similar lines to South America and other parts of the world, R. G. Vaughan, superintendent of the Canadian Government Merchant Marine recently visited Vancouver.

The line to Australia and New Zealand will be established almost immediately, or just as soon as the ships are available. Four ships will start on this service with the intention of giving a monthly service.

Other services, such as that to South Africa, or to the Orient, will be established as soon as there is reasonable prospect of business offering both going and coming, Mr. Vaughan said.

### POSITION OF PAPER IN ITALY

The customs valuation of Italy's trade in materials for paper manufacture, paper and books in 1913 was

\$9,271,156 for imports and \$4,419,327 for exports. In 1917 the imports and exports were valued at \$17,602,087 and \$8,126,108, respectively, and in 1918 at \$14,166,307 and \$4,948,038. In 1913 both imports and exports of raw materials were composed wholly of cotton and woollen rags. Imports of semi-manufactured products as well as exports were composed of pulps and cellulose. Of the manufactured goods nearly \$500,000 was cigarette paper sent principally to Austria-Hungary, Turkey and Egypt; \$950,000 was writing paper, of which Central and South America took more than half, Argentina and Brazil being the principal customers; \$100,000 was envelopes, nearly all going to Argentina; \$100,000 was tinted paper of all kinds, shipped principally to Brazil; \$140,000 was cheap wrapping paper, going mainly to Egypt and Malta; and the remainder was printed matter and small quantities of other paper manufactures.

The market in Italy is much the same as in all other countries as regards paper, which is scarce and high priced, says Mr. C. T. F. Dumont, American Consul at Florence, who goes on to suggest that in view of the quantities of thin, cheap writing paper used in all Latin countries in Europe and of the quantities exported by them to Latin America, some American firms may consider it worth while to undertake its manufacture in the United States for the export trade.

Imports of cotton, woollen and mixed rags have been included in this category, because they appear in the Italian paper schedule. As an actual fact, it is likely that little of them enter into the manufacture of paper in Italy. The country produces more than enough fibres of vegetable origin for this purpose, and these imports really belong to the cotton and woollen tables, as they are used principally in the manufacture of shoddy for clothing and blankets.

In the period 1910-1913 imports of cellulose averaged 83,500 tons a year, of which in 1913 Germany furnished 38 per cent, Austria-Hungary 37 per cent, and Norway 17 per cent. The small quantities of wet pulp imported came from Austria-Hungary. In the same period imports of dry pulp averaged 9,848 tons, of which Austria furnished 67 per cent, Germany 18 per cent, and Norway 10 per cent.

### AMERICANS TO TAKE OUT PULP-WOOD

The Nyando Pulp and Paper Company of Rochester, N. Y., is about to commence operations at Windigo and will shortly open up a large pulp-wood camp. The wood will be taken out during the winter and shipped to the mill in the spring. Mr. Thomas Beveridge of St. Ignace, Michigan, superintendent for the company, is on the scene of operations.

The Nyando Pulp and Paper Company is the concern which, a couple of years ago, purchased practically all the timber holdings of Messrs. Hogan Brothers, Fort William, on the Lac de Mille Lac, said to be one of the finest tracts of spruce in Ontario.

### SQUARING UP YOUR DEBTS

When you began work you borrowed something. You borrowed the experience of men who had been at work before you. From the older men you secured the information which has enabled you to carry on your work.

It is up to you to pass on this help to the young men—the new men—who are working with you.

Show them how to work safely.



# UNITED STATES NOTES

A resolution proposing investigation of "every matter touching the high cost of print paper to publishers," was introduced in Congress last week by Representative Ricketts of Ohio. Specifically the possibility of a monopoly in the print paper industry would be probed, and the "reason for the apparent discrimination" between the metropolitan and small city dailies in the distribution of paper.

Emil J. Hansen, who has been connected with the Northern Paper Mills of Wisconsin for the past eight years, has resigned his position as sales manager with the Northern Paper Company to take up work in the near future in a similar capacity for the Fort Howard Paper Company. The latter concern, which was organized early in the year, has its paper plant at Green Bay, Wis., nearly completed, and will begin actual operations within a short time. Its main product will be paper towels, tissue paper and allied lines.

The Medical and Hospital Supply Branch, Surplus Property Division, of the War Department at Washington, D.C., has advertised the sale by informal bid at six cities of large quantities of cellu-cotton for paper manufacture which have been declared surplus. The raw material thus offered for sale is described as being of the highest quality of wood cellulose—an absorbent product made from wood, suitable for use as a bleached sulphite pulp. Approximately 270,000 lbs. of this cellu-cotton is stored at the present time in various quantities at Atlanta, Philadelphia, Chicago, St. Louis, San Antonio and at San Francisco.

The forest patrol service in San Diego County, California, which is usually withdrawn in November, when more or less precipitation occurs, continues to be retained this year mainly because the danger from forest fires, due to a long continued drought, is considered just as great now as in August. At present the cool nights with necessity of fires, increase the danger of conflagrations, and until the long-awaited rain falls, the patrolmen and rangers will have to continue maintaining guard in the forests at all hours.

The Star Box and Paper Company of Chattanooga, Tenn., has purchased machinery and let out contracts for the construction of a \$100,000 paper box plant at Nashville, Tenn. The plant is expected to be in operation by April 1, 1920. The company, which will engage in the manufacture of corrugated shipping paper and is planning an output of from one and a half to carloads of manufactured goods per day, is arranging to supply six or seven of the Southern States. The officers of the company are: John Stegmeier, president, and John G. Kain, secretary.

R. S. Kellogg, secretary of the News Print Service Bureau, New York City, basing his opinion on figures recently submitted to him in a report from the Canadian Export Paper Company, Ltd., of Montreal, has issued a statement in which he declares that the scarcity of newsprint paper in the United States cannot be attributed to largely increased shipments by Canadian concerns. Canadian exports during the first eight months of 1919, ended August 30, are shown by the figures sent to Mr. Kellogg to have been 42,704 tons in 1918 and 47,860 tons in the same months

of 1919. The United States, according to Mr. Kellogg's own figures, is credited with shipping 69,586 tons of newsprint overseas in 1918 and 88,933 tons in 1919. Canadian shipments, according to the Montreal authority, have increased 12.7 per cent, while those from the United States have gone up 27.6 per cent. "These figures from official reports," said Mr. Kellogg, "show that for the eight months ended August 30 overseas shipments on newsprint in Canada were possibly 5,000 tons heavier in 1919 than in 1918, and that the exports of newsprint from the United States were approximately 19,000 tons greater this year than last. However, the total quantity of newsprint exported from both countries is a very small proportion of the domestic consumption."

In an endeavor to bring down the soaring prices of milk to consumers in New York City, an independent delivery company, it was announced last week by the Metropolitan Health Commissioner, is about to begin distributing fluid milk in paper containers. As a start about 6,000 quarts are to be placed on the market at a reduction of four cents from the present price charged for milk delivered in glass bottles. The paper containers, according to the Health Department report, have been subjected to every possible test with the result that they have proved to be the equal of bottles in every vital respect.

Mr. James A. Connors of the James W. Sewall office, Old Town, Maine, timber cruisers and foresters, has returned from northern New Hampshire and Vermont, where he has been cruising large areas of timberlands. Mr. Connors reports considerable optimistic feeling as to the future forest values throughout that part of the country. Mr. W. P. Billings of the same office, is engaged in estimating on some 70,000 acres of land in northern Maine.

## BARNES BUYS PEJEPSCOT MILL

Canadians, especially in Southern Quebec, will be interested to know that Julius H. Barnes, Wheat Director of the United States, has with associates, purchased the majority stock of the Pejepscot Paper Company and its subsidiaries.

The property includes the paper mills, timber lands and a fleet of tugs and barges. The purchase price is said to have been \$750,000. The property owned by the company consists of four lumber mills located at Great Salmon River, Martin's Head, Cookshire and Sawyerville, Quebec; two pulp mills (mechanical) situated at Pejepscot Mills and Topsham Mills, Me., with a daily capacity of 150 tons of groundwood; a chemical pulp mill at Lisbon Falls, Me., with a daily capacity of 40 tons of sulphide fibre and three newsprint mills at Lisbon Falls, having a total daily output of 160 tons.

Callitypy is the name of the new method of preparing copy in typewriting for the magazines that have eliminated the typesetting machine and are printing direct from photogravure plates. The new process deserves a name that sounds less like a survival from the bad old days of tongue-tied bibulosity.



## Technical Section



**A-1, F-O. Pulp suitable for paper from the trunk and leaves of the banana-tree.** Fr. patent No. 493,305. R.C.L. Blanchin. *La Papeterie*, **41**, 400-1, (Oct. 10, 1919). The cooking is carried out in digesters under the following conditions: wood 1000 kg.; NaOH (as a 3% solution) 70 kg.; cooking pressure 4 kg. (about 53 lbs.); time of cooking 4 hours. The spent liquor contains about 80% of the original NaOH and is recovered. The yield varies from 35-40%, according to the moisture content of the wood.—A.P.C.

**A-1. Pulp from pine needles.** Fr. patent No. 493,551. R. Ariès. *La Papeterie*, **41**, 403, (Oct. 10, 1919). The process presents no new feature, but is simpler than the preparation of pulp from wood as there is no barking, chipping, nor knot extraction. It is simpler than treating straw as the latter must be crushed to remove knots.—A.P.C.

**A-2, K-6. High grade papers from second-cut cotton linters.** *The Paper Maker. La Papeterie*, **41**, 411, (Oct. 10, 1919). High grade papers can be made from second-cut cotton linters cheaper and more economically than from wood. The supply of linters in the U. S. would be about 600 tons a day. (See full text, "Paper" June 18 and *Pulp & Paper Mag.* Aug. 21-28, 1919.)

**A-3. Bagasse paper.** From World's Paper Trade Rev. *La Papeterie*, **41**, 407-11, (Oct. 10, 1919). The problem of the manufacture of bagasse paper has long been satisfactorily solved. The main difficulty at the present time is that a sugar factory operates only during a few months in a year, and bagasse will not keep any length of time.—A.P.C.

**A-14, K-O. The diseases of paper.** (*La flore du papier*). F. H. *La Papeterie*, **41**, 394-7, (Oct. 10, 1919). A short description of a few of the numerous fungi which have been identified on paper.—A.P.C.

**B-2. Experiments in scientific cutting.** W. R. Brown. *Can. For. J.*, April, 1919, page 169. Discusses the results of experimental cutting under observation by the Brown Corporation during the past 25 years. Shows that observation of the diameter limit method is liable to result in serious loss through windfall. The hardwoods greatly retard the growth of the conifers. Balsam fir tends to more plentiful reproduction than spruce. Advocates clean cutting, leaving occasional seed trees, and utilizing the hardwoods wherever possible; otherwise girdling. The present method of cutting on Brown Corporation lands is to follow a nine-inch stump diameter rule for spruce and pine and cut the fir and other softwoods clean, being very careful to protect and save all the young trees and sprout growth possible when getting out the mature timber. Every tract proposed for operation should have its special study and its operation determined by a trained forester.—C.L.

**B-2. Limit holders to experiment with slash disposal.** *Can. For. J.* March, 1919, page 132. Suggestions by A. L. Dawe, Woodlands Section, Canadian Pulp & Paper Assn. with regard to experiments in slash disposal.—C. L.

**B-2. The miracle of Gascony's pine.** Brig.-Gen. J. B. White. *Can. For. J.* Feby., 1919, page 61. How

pine planting converted an out-at-elbows desert into the richest French department.—C.L.

**B-2. Where do the seeds come from?** *Can. For. J.* Feby., 1919, page 62. Reviews bulletin by J. V. Hoffman, U.S. Forest Service, on the natural reproduction from seed stored in the forest floor. Shows as a result of investigations made in the West, that large quantities of tree seeds are stored in the forest floor, and give rise to a new crop after cutting or burning, where the burn has not been too severe.—C.L.

**B-2. The making of a spruce tree.** Dr. C. D. Howe, *Can. For. J.*, Feby., 1919, p. 59. The beginning of a series describing how a tree is made and tracing its life history from the very beginning through its infancy, youth, maturity, old age and decay. For the second and third of this series, see *Can. For. J.* for March, p. 114, and April, p. 186.—C.L.

**B-2. Replanting barren lands in Canada.** Clyde Leavitt, *Can. For. J.*, Dec. 1918, p. 1992. Describes the planting program of the Laurentide Company and the Riordon Pulp and Paper Company.—C.L.

**B-2. Women a success in planting work.** G. P. Gordon, *Can. For. J.*, Dec. 1918, p. 1961. Women are being used to a very considerable extent in forest planting operations in Great Britain.—C. L.

**B-2. The high mortality of balsam fir.** Dr. C. D. Howe, *Can. For. J.*, Nov. 1918, p. 1929. In the mixed forests of the hardwood and softwood type in the province of Quebec, a very large proportion of the coniferous regeneration is balsam, while only a comparatively small percentage is spruce. The liability of balsam to disease renders the problem of the reproduction of the forest one of great importance. In the virgin forest it takes from 150 to 200 years to make a spruce tree 12 inches in diameter at the present rate of growth, in the mixed forests where there is a cover of hardwoods. This situation greatly emphasizes the necessity for finding some way to utilize the hardwoods.—C.L.

**B-3. The probable cost of aeroplane patrol.** *Can. For. J.*, March 1919, p. 126.—C.L.

**B-3. Guarding 21 million acres by co-operation.** Arthur H. Graham, *Can. For. J.*, March, 1919, p. 130. Describes the work of the Ottawa River Forest Protective Association during the season of 1918.—C.L.

**B-3. A machine to locate forest fires.** *Can. For. J.*, April, 1919, p. 149. Describes the Osborne Fire-Finder. This instrument is now in use by the Dominion Forestry Branch at Kamloops, B.C.—C.L.

**B-3. British Columbia reduces fire hazards.** M. A. Grainger, chief forester, *Can. For. J.*, April, 1919, p. 152. New legislation renders obligatory the burning of debris in commercial operations, under certain conditions.—C.L.

**B-3.—The aeroplane in B.C. forests.** *Can. For. J.*, Dec. 1918, p. 1960.—C.L.

**B-3. Surveying by camera from the air.** Lt.-Col. Cull, D.S.O., R.A.F., *Can. For. J.*, Jan., 1919, p. 20. Discusses the uses of aircraft in forest mapping.—C.L.

**B-3. Combatting insect foes of the forest.** Dr. J. M. Swaine, *Can. For. J.*, Jan., 1919, p. 12.—C.L.



**B-3. Hydroplane for forest protection.** Hy Sorigus, Can. For. J., Dec. 1918, p. 1970. See also p 1976.—C.L.

**B-3. Forest protection in British Columbia.** Clyde Leavitt, Can. For. J., Nov. 1918, p. 1931. Advocates a material extension of the fire patrol organization with particular reference to areas of young forest growth.—C.L.

**B-3. A new forest insect enemy of the white birch.** Dr. J. M. Swaine, Entomological Branch, Can. For. J., Nov., 1918, p. 1928. Much damage is being caused to white birch, particularly in the province of Quebec by the bronze birch borer. Yellow birch is not so seriously affected.

**B-3. Winter injury to trees, 1917-18.** W. T. Macoun, Dominion horticulturist, Can. For. J., Nov., 1918, p. 1917.

**B-3. Erosion in the Appalachian and Piedmont regions.** R. O. E. Davis, Amer. For., Sept., 1919, p. 1350.

**B-3. Forest losses on the Italian front.** N. C. Brown, U. S. Trade Commissioner, Amer. For., Sept. 1919, p. 1315.—C.L.

**B-4. The tree-soldiers of France.** Major Barrington Moore, Can. For. J., Feby, 1919, p. 68. Discusses the forestry situation in France and the work of the American Forestry Corps.—C.L.

**B-4. Building up new trade means building up new forests.** Sir Geo. E. Foster, Can. For. J., Jan., 1919, p. 6. "Canada must supervise and improve her methods of cutting and very possibly limit the yearly cut in the interest of future generations. Canada must protect her forests from fire by the wise expenditure of money in guarding and supervision. Canada must fit herself diligently to the task of afforestation."—C.L.

**B-4. New use of birch for paper making.** Clyde Leavitt, Can. For. J., Nov., 1918, p. 1922.—C.L.

**B-4. The uses of wood Floors made of wood.** Hu. Maxwell, Amer. For., Spct., 1919, p. 1343.—C.L.

**B-9. Photographing forests from the air.** Lieut. Lewis, R.A.F., Can. For. J., March, 1919, p. 110.—C.L.

**B-9. Lumbermen and the tree supply.** W. Gerard Power, President Canadian Lumbermen's Association, Can. For. J., March, 1919, p. 115. Advocates extensive investigations to determine the amount and location of existing forests, the amount of annual growth and methods of increasing same, and a soil classification to facilitate the direction of settlement to districts offering the greatest prospect of success, non-agricultural lands to be withheld from settlement for forestry purposes.—C.L.

**B-9. Does the West need forests?** Robson Black, Can. For. J., March, 1919, p. 118. Advocates the transfer to the Dominion Forestry Branch of the control over cutting regulations on Dominion licensed Crown timber lands in the western provinces.—C.L.

**B-9. The day after tomorrow.** Robson Black, Can. For. J., Feby., 1919, p. 74. A plea for constructive public action in establishing wise methods of handling forests.—C.L.

**B-9.—Do forests increase rainfall?** Dr. B. E. Fernow, Can. For. J., Dec. 1918, p. 1965. "The forest condition, due to its lower temperature and greater relative humidity is favorable to precipitation as against the open field with its higher temperature and drier air, which furnish less favorable conditions for precipitation. Extensive forest areas are as a rule favored by large rainfall, but it is an open question

whether the forest is the cause or the result. We must doubt, however, whether the small woodlot is a rain-maker." See also Can. For. J., Feby., 1919, p. 54.—C.L.

**B-9. New ways in the woods.** Ellwood Wilson, Can. For. J., Nov. 1918, p. 1934. Emphasizes the necessity for a careful study of forest conditions, with a view to carrying out practices calculated to reproduce a forest of valuable species.—C.L.

**B-9. The case of Nova Scotia's forests.** Robson Black, Can. For. J., Nov., 1918, p. 1940. Advocates the employment of a Provincial Forester in Nova Scotia, to organize and develop the fire ranging staff, and to carry on a campaign of education for the proper protection and management of the forests of the province.—C.L.

**B-9. The new birth of forestry.** Prof. Filibert Roth, Can. For. J., Nov., 1918, p. 1924. Discusses forestry developments in Europe and the need for greater attention to the reproduction of the forest on this continent. "The growing of timber is a national function."—C.L.

**B-9. Where the forest dollar goes.** Robson Black, Can. For. J., Dec., 1918, p. 1979. "Of every dollar that comes out of a log four parts go for wages and supplies and the other part pays taxes and interest on the investment."—C.L.

**D-5. Ground wood pulp from waste wood.** Eng. patent No. 117,086. J. C. vanWessen, Holland. *Chimie & Industrie*, 2, 963, (Aug., 1919).—A.P.-C.

**F-5. Process for obtaining chemical woodpulp.** Eng. patent No. 116,288. Aktiebolaget Cellulosa, Sweden. *Chimie & Industrie*, 2, 963, (Aug., 1919.) It is obtained by the action of NaOH liquors, free from S, containing 60 g. Na<sub>2</sub>O per l, in presence of a catalyst, such as Hg. The air in the wood is eliminated either by soaking or by putting the boiler under a vacuum.—A.P.-C.

**K-23. Water- and acid-proof paper.** D.R.P. No. 307,867. Heddenheimer Kupferwerk und Süd-deutsche Kabel Werke Akt. Ges. *Chimie & Industrie*, 2, 964, (Aug. 1919). An oxidising agent, e.g., minium, (red lead) is added to the stock, and the air-dry paper made from it is treated with a drying oil.—A.P.-C.

**K-24. Proper care of stocks of paper.** Preceptor. *La Papeterie*, 41, 403, (Oct. 10, 1919). Storehouses for paper should be kept dry and at such a temperature that the moisture content of the paper will not fall below about 7%. There should be but little light, and the paper should be wrapped up and completely protected from sunlight.—A.P.-C.

**L-4. Manufacture of hollow articles from cellulose.** D.R.P. No. 307,256. Chemische Fabrik von Heyden, Akt. Ges. *Chimie & Industrie*, 2, 964, (Aug., 1919.) Moulds larger than the required objects are placed in a cellulose solution; the cellulose is precipitated on the mould; this is removed and placed on a smaller mould to dry.—A.P.-C.

**R-2. Historical notes on the paper trade in France.** Part 2. H. F. *La Papeterie*, 41, 398-9. (Oct. 10, 1919.) A short historical sketch of the attempts made to obtain raw materials other than cotton, and a short description of the preparation of the rags for making paper by hand. (Cont'd.)—A.P.-C.

**R-5. The Japanese paper market.** From *World's Paper Trade Rev. La Papeterie*, 41, 422, (Oct. 10, 1919.) The article gives figures for the Japanese paper trade from 1913 to 1918.—A.P.-C.

# PULP AND PAPER NEWS



The death took place in Barrie on November 30th of R. B. Weldon, brother of I. H. Weldon, President of the Provincial Paper Mills Company, Toronto, and of T. A. Weldon, Vice-President of the same company at Thorold. Deceased was a resident of Toronto before moving to Barrie fifteen years ago. He was in his 51st year and is survived by his widow and four sons.

The Windsor Paper Company, Limited, has been incorporated under the Ontario Companies' Act, for the purpose of manufacturing and dealing in paper made from any material. The incorporators are Arthur Cecil Cleverley, Thomas Charles Hawkins, Kenneth Douglas MacPherson, Mabel Hawkins Dwyer and Bessie McLeod, all of Windsor.

A company known as the Colonial Printing Company, Limited, has been organized in Toronto and has been granted a charter by the Ontario Government to carry on business of printers, publishers, metal and tin plate printers, etc. The incorporators are Henry Welch, Samuel Snider, George Wilkins, Thomas Hubert Wilson, Stanley Rowland Jefferess, all of Toronto.

The Toronto office of the Georgetown Coated Paper Mills has been moved from the Atwell Flemming Building to rooms 3 and 4 Phoenix Building, corner of Victoria and Adelaide Streets, where J. A. Wiloughby, president, and F. H. Gage, sales manager, have their quarters.

D. H. Hudson of the Hindson Paper Company, Winnipeg, was a business visitor to Toronto this week. Mr. Hudson is on a buying trip in the East.

Ossian Ray of the Canadian Export Paper Company, Montreal, was in Toronto this week calling on the trade.

Kenneth Lyons of Maurice O'Meara Company, paper dealers, New York, spent some days in Toronto this week.

A number of the paper mills in the St. Catharines-Thorold district have adopted an auxiliary method of conserving their coal supply. With a view to stopping the leakage of coal from the dumps they have erected steel wire fences around the precious product and a strip of barbed wire along the top renders it difficult for anyone, not used to negotiating No Man's Land in France, to go over the top and carry off the black nuggets, while the fence is so arranged that it is impossible to get through it. This means of protecting the coal has been found necessary by reason of the quantities that were being pilloined from the piles.

A company has been established in Peterborough for the manufacture of paper boxes, cardboard and other paper products, which will commence operations during the next month. A number of Peterborough men have taken stock in the new enterprise. A building has been secured and machinery ordered. The city was not asked for concessions or assistance of any sort.

The sympathy of the paper trade will be extended to George C. Winslow of the sales department of the Canada Paper Company in the serious accident which befell his father, Robert C. Winslow, aged 72 years, who was struck by a street car on Wellington Street, Toronto, receiving injuries from which it is thought he cannot recover. Mr. Winslow was for many years the accountant for D. D. Hawthorne & Co., having been in the boot and shoe business for many years.

A. P. Costigane, secretary and engineer of the Ontario Pulp and Paper Makers' Safety Association, has already received orders for 10,000 of the All-Canada Safety Calendars, designed to spread the gospel of Safety First throughout the Canadian paper mills. Each sheet of the calendar contains a striking drawing illustrating the wisdom of taking no chances by the men while working in the mills or out of them.

Advices have been sent out by some of the paper mills that they will in future charge an extra quarter cent a pound for wrapping papers bunched. The mills point to the rising price of twine and all classes of cordage, together with the higher wage scale, in justification for adding the extra quarter of a cent for bundling.

James Fisher has resigned the position of manager of the Toronto office of McConnell & Fergusson and will shortly organize a new agency to be known as The James Fisher Company. Associated with Mr. Fisher as members of the new company will be Messrs. W. H. Bowman, E. W. Reynolds and W. M. Chisholm, all of whom have been connected with McConnell & Fergusson and are well and favorably known in advertising circles. Mr. Fisher came to Toronto from Stratford, where he was business manager of the Stratford Herald for some years. Mr. Reynolds was for seven years on the editorial staff of the Toronto Globe and Mr. Bowman spent twelve years as copy writer and advertising counsel with the firm he is now leaving. Mr. Chisholm is a Nova Scotian but a graduate of the Ontario Agricultural College. He has been in the advertising game for several years.

Mr. Pierre Rolland late of the Clark & Turgis, wholesale paper dealers, of Paris, France, has joined the staff of the Buntin Reid Co., Toronto, as their Eastern representative, and will visit the customers in the territory of Quebec, New Brunswick and Nova Scotia. Mr. Rolland has had many years experience in the paper business, and comes thoroughly qualified to take up his new duties.

The Ottawa Car Manufacturing Company, Limited, are erecting a new brass foundry on Slater Street, Ottawa, in close proximity to their main plant. Construction work is well under way and when completed this foundry will be one of the most up-to-date in Canada. The main building of the foundry is 50 ft. by 112 ft. with extra buildings for coke storage, metal storage and so forth. This extension was made necessary on account of the rapid growth in this firm's business, a considerable volume of which comes from the pulp and paper industry. Mr. T. Ahearn is presi-

dent, W. Y. Soper vice-president, W. M. Arnold, general manager, and W. H. Inglis, who has had many years' experience with several of the largest foundries on the continent, is superintendent of their foundry.

At a meeting of the board of directors of the Wagamack Pulp and Paper Company, held in Montreal, Norman J. Dawes was elected a director. He is a director of the Windsor Hotel Company in Montreal, and managing director of National Breweries, Ltd.

The Hon. Beniah Bowman, Minister of Lands and Forests in the new U.F.O.-Labor Government, accompanied by his wife, paid a short visit to Iroquois Falls recently.

**BRITISH COLUMBIA NOTES**

The Ocean Falls plant of the Pacific Mills Ltd., is operating twenty-four hours a day, seven days a week, shutting down for repairs only when absolutely necessary. The plant is being operated continuously in an endeavor to get the production up to the limit, particularly in newsprint, which is being shipped to several points in the States as well as supplying local customers. Orders are way ahead of supplies and it looks as though these conditions would be sustained for some time to come.

The Canadian Mercantile Marine's new steamer, "Canadian Importer," was launched from the Coughlin shipyard on Saturday, December 6th. It is reported that this steamer will be outfitted and ready to sail January 15th. Besides other merchandise they will carry a certain amount of newsprint destined for Australia. This will be the first steamer sailing with a cargo for New Zealand and Australian ports. It is hoped to have four steamers handling freights between Vancouver, New Zealand and Australia between now and next June, 1920, according to officials of the Canadian Mercantile Marine. This means much to the pulp and paper industry as well as other industries in British Columbia. As fast as boats are being obtained from the plants other lines of transportation will be opened by this company, touching the Orient, Siberia, South Africa and the west coast of South America. It will take a little time to get all these routes into operation but it will be comparatively soon and new channels of trade will be opened to manufacturers of pulp and paper products.

Mr. George Whalen of the Western Pulp and Lumber Company will return to Vancouver the latter part of the week after an extensive business trip which has taken the past three or four weeks. Mr. Fryer of the same company has sailed for the Orient in connection with business for the company.

Beaver Cove Lumber and Pulp Company, Ltd., are operating their lumber and shingle mill but owing to unforeseen difficulties in securing machinery for their pulp mill this part of their plant cannot begin operations before January 1st. This is disappointing owing to the condition of the market and the fact that they are in receipt of many orders for pulp which they are unable to fill at the present time.

The pulp wood in the block pile of the Laurentide Company is estimated by the engineering department. The cubical contents are measured with surveying instruments. On account of the uneven way in which the pile is formed it is necessary to allow 167 cu. ft. to the cord although when properly piled a cord of wood occupies only 128 ft.

**CANADA BOX BOARD PLANT FOR TORONTO**

At the annual meeting of the Canada Box Board Company, Limited, held in Toronto on the first day of December, 1919, satisfactory report for the year's operation was presented. The following directors were elected: Honorable M. J. O'Brien, President, F. G. G. Kerry, Vice-President, Honorable E. D. Smith, G. A. Campbell, J. A. O'Brien, O. A. Porritt, J. R. Walker.

The operations of the company remain under the management of Mr. N. G. Gzowski and Mr. O. A. Porritt.

The company has under contemplation the erection of an up-to-date plant in Toronto, and the executive is hard at work on the plans.

**WHERE 2775 TONS OF NEWS ARE MADE.**

The Dominion is now producing 2,775 tons of newsprint a day, or a total of about 800,000 tons a year. The above estimate is official, being vouched for by the Canadian Pulp and Paper Association. This tonnage is made up as follows:

Abitibi Power and Paper Company	240
Belgo-Canadian Pulp and Paper Company	200
J. R. Booth	150
Brompton Pulp and Paper Company	95
Canada Paper Company	35
Donnacona Paper Co	100
E. B. Eddy Company	50
Fort Frances Pulp and Paper Company	150
Laurentide Company, Limited	225
News Pulp and Paper Company	30
Ontario Paper Company	225
Pacific Mills, Limited	200
Powell River Company, Limited	225
Priece Brothers & Company	250
Spanish River Pulp and Paper Company	500
St. Maurice Paper Company	100

Total . . . . . 2,775

Optimists in the paper industry predict that within ten years, at the present rate of progress, Canada will be producing two million tons of newsprint a year, which is equivalent to the total consumption of newsprint in the United States in the year 1918.

**CONDENSERS, PUMPS, COOLING TOWERS, ETC.**

Revised and enlarged Bulletin No. 112-B, entitled "Condensers, Pumps, Cooling Towers, Etc.," has just been published by the Wheeler Condenser & Engineering Co., Carteret, N.J. This bulletin illustrates the latest developments in condenser practice. It shows a surface condenser containing 50,000 sq. ft. of surface. Sixteen condensers of approximately this size are now under construction. These will contain approximately 1,000 miles of tubing. The bulletin shows photographs of a number of actual installations of surface condensers. It illustrates and describes surface condensers, jet condensers, barometric condensers, the Wheeler-Edwards air pump, the Wheeler rotative dry vacuum pump, the Wheeler turbo-air pump, the patented Wheeler steam jet air pump, Wheeler centrifugal pumps for all services, natural and forced draft cooling towers, feed water heaters and Wheeler evaporators and dryers.

A free copy of this bulletin will be sent to responsible persons upon application.



# The Markets

## CANADIAN TRADE CONDITIONS

Toronto, Dec. 6.—While conditions generally in the paper trade are unchanged in respect to prices and almost universal shortage as compared with the demands in practically all lines, and while the paper industry is undergoing a boom seldom equalled in its history, there is a distinct feeling of anxiety among the manufacturers in connection with the failing coal supply. With prices in all lines firm and the demand more than the mills can supply there is the spectre of closing factories before the industry at the present time. Take the case of the tissue mills. This branch of the paper industry is dependent upon such manufactures as those engaged in confectionery, boots and shoes, etc. According to the present outlook, there is every possibility of factories of this character being closed for lack of fuel which, in turn, will react on the prosperity of the tissue paper makers. Indeed not a few of the paper mills themselves are displaying considerable anxiety over the situation and although a number of the mills in the St. Catharines-Merritton-Thorold district say they have coal enough for about three months, there are other mills in Canada that are faced with the possibility of closing down unless a month's time disposes of the crisis. One of the biggest paper mill companies with offices in Toronto has only sufficient coal to put them through for a little under a month and if none is available before then they will have to close down. In addition to this somewhat gloomy outlook there is the possibility of shipments being reduced owing to the cutting off of some of the freight trains, a prospect that is causing publishers a good deal of anxiety, owing to the already great difficulty in getting hold of newsprint. The scarcity in this commodity continues, the demand far out-weighting the supply with no prospects of the situation being relieved in this respect.

It has already been noted that Canada is now producing newsprint at the rate of approximately 2,775 tons daily or at the annual rate of nearly a million tons. These figures are given added weight by reason of the report from Swastika, in Northern Ontario, that the suggestion has been seriously made looking to the

thorough investigation of the possibilities of the commercialization of the numerous sulphide dikes which occur in various parts of Timiskaming. These districts include Whitney Township at Porcupine, Otto and Eby Townships in the Kirkland Lake area, as well as a pyrite dike south from Larder Lake. It is reported that the sulphur content of the ore in some cases runs upwards of forty per cent. It is pointed out as being quite remarkable that with such indicated resources at home the consumers of sulphur should find it necessary to import the article from across the line. It is claimed by mining engineers that provided the Northern Ontario deposits could be worked with commercial success and be made to compete with the imported article as regards price and an assured supply, the cost of producing newsprint in Canada could be reduced by about a ton. This, in turn, would indicate the possibility of saving about \$1,000,000 to the paper industry of the Dominion and at the same time contribute to the upkeep of a number of the country's mining enterprises.

In all lines of the envelope, blank book, writing paper and papeterie branches of the paper trade, business is booming and the output during the past several months, for the fall and winter trade, has been greater than ever before. In the lines mentioned and in the specialty lines there have been vastly increased sales, one Toronto concern reporting an increase of over one hundred per cent as compared with the fall of a year ago. This business record has been achieved despite the fact that the manufacturers of these lines have been for some time under the handicap that the paper mills have been, and are now, oversold for several months ahead and it is very difficult to get delivery. While the Provincial Paper Mill at Georgetown has doubled its coating mill capacity there was no material increase in the raw stock output, with the result that while the output of coated papers was considerably added to, the situation was not greatly improved in the line of feather weight papers. Orders for ledger and bond papers placed with various mills last May in many cases have not been filled yet. There is some question among Canadian jobbers and manufacturers as to whether or not the mills are un-

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES 8311  
8312 MURRAY HILL,  
8313

NEW YORK

We are always in the market  
and ready to pay good prices  
for

# SULPHITES

Bleached and Unbleached of  
Canadian manufacture.  
Write and let us show you  
what we can do.

duly attentive to the export trade and in this connection it is stated that one Ontario paper mill has undertaken to deliver 250 tons a month to a Montreal jobbing firm, most of which will eventually be for export. Naturally, deals of this nature more or less tie up the manufacturers for the home trade.

As indicating the big development in the finer grades of paper in Canada since the war, one of the largest manufacturers in Toronto stated that his firm were buying all their fine writing papers, high-grade ledgers and bonds and linen face papers from Canadian manufacturers now, whereas before the war these were purchased in England and the United States. This is due to the enormous business the mills are getting following the big development of the paper industry in Canada. The firms which make up the product that comes from the big paper mills, of course, shared in the general development, for the demand for their goods increased as supplies became available but not sufficiently to meet requirements. So it is that when the statement is made that the recent output of the manufacturers has increased one hundred per cent and that there has been a big development in the paper industry, it does not mean that the demands of the country in these lines are being met. The manufacturers of envelopes, writing papers and kindred lines could sell a great deal more goods if they could get the paper to make them up. While the output has been increasing the price has been advancing also, a condition created partly by an increase of thirty-three and a third per cent in wages. This, and other causes, means that values as they existed a year ago are no guide as to what they will be in the future. Prices in these lines are established in the Spring and it is expected that the prices to be fixed in the coming Spring will show a marked advance over the values at present in force.

Some improvement has been made in the jobbing trade by the mills in reducing the number of grades of cheap, white writing papers. Heretofore it has been considered that too many grades of these papers were being manufactured, making the handling of them cumbersome for the jobbers and delaying production as well. It is considered that the reduction in this line will result in no inconvenience to the market, while the printer will welcome the change.

In groundwood pulp the demand continues to exceed the production and the mills are running at full capacity in an endeavor to catch up with their orders. From \$38.00 to \$40.00 is the ruling price.

Prices of rag and paper stock are still on the upward trend and the general demand for all grades keeps up. The past ten days saw No. 1 white envelope cuttings go to \$4.80 and No. 1 soft white shavings underwent a ten cent increase. Another five cents was added on to white blanks and heavy ledger stock while magazine and book stocks also went up correspondingly. The prices below govern for the time being but the dealers in these lines say that the prices are liable to go higher before they descend.

#### Rag and Paper Stock Prices

F.O.B. Toronto

No. 1 white envelope cuttings	\$4.80
No. 1 soft white shavings	\$4.35
White blanks	\$1.85
Heavy ledger stock	\$2.80
No. 1 magazine	\$2.30
No. 1 book stock	\$2.00
No. 1 manilas	\$2.30
No. 1 print manila	\$1.55

Folded news	\$1.10
Over issue, news	\$1.20
Kraft	\$3.50
No. 1 clean mixed papers	\$1.00
No. 1 shirt cuttings	14½c
No. 1 unbleached cotton cuttings	13c
No. 1 fancy shirt cuttings	11c
No. 1 blue overall cuttings	11c
Bleached shoe clip	12c
White cotton hosiery cuttings	13½c
Light colored hosiery cuttings	11c
New light flannelette cuttings	11c
No. 2 white shirt cuttings	11c
City thirds and blues (repacked), No. 1	4½c
Flock and satinettes	\$2.90
Tailor rags	\$2.80
Gunny bagging	3¾c to 4c
Manila rope	6¼c

#### NEW YORK MARKETS.

New York, December 6.—The serious situation in age is creative of additional strength to paper prices. Mills making various kinds of paper and situated in different parts of the country are, because of the uncertainty surrounding future operations being obliged to refuse business, and buyers of paper consequently are encountering increased difficulty in covering their wants with the natural result that prices, although nominal to a degree, are mounting at a steady pace. How badly paper manufacturers as a whole are hampered by a lack of fuel is difficult to say. Individual cases are reported where mills have been compelled to practically shut down, and while instances of this sort are exceptional there is no denying that virtually every manufacturing establishment is affected to some extent, so that production is materially suffering. Moreover, unless some improvement in the situation is brought about in the very near future the probabilities are that the majority of paper mills will have to close down. Newsprint manufacturers are more fortunate than their brother papermakers. They are on the priority list of the Fuel Administration and coal is being supplied them through the good graces of the Government in preference to other consumers. Some paper mills are said to be burning oil and in this manner to be meeting the emergency with considerable success.

Demand for all kinds of paper shows no abatement. Rather, it seems to have quickened this week, though the increased inquiry probably can be attributed to the extra efforts buyers have been forced to exert in locating supplies. Current demand is decidedly in excess of the offered supply and, as is to be expected under such conditions, prices are firmly on the upward. Further sales of newsprint in rolls for spot delivery have been recorded at 7.50 to 8 cents per pound, and consumers who have bid these prices have frequently been unsuccessful in finding news available. Transient buyers are reported to be in a serious predicament. Their stocks in many cases have been entirely used up and they are meeting with scant success in their efforts to acquire additional supplies. Mills with few if any exceptions have all they can attend to in keeping contract customers supplied and few sizable lots of newsprint find their way into the open market. Jobbers, it is reported, are securing as high as 9.50 cents a pound for newspaper in small quantities, and reports have been heard regarding sales by manufacturers to exporters at close to this figure.

The fine paper market is characterized by almost the same degree of firmness as that prevailing in newsprint. Available supplies are tightly held and manufacturers are doing little offering, most of them frequently refusing to accept orders even from regular customers. New England is possibly more seriously affected by the coal shortage than any other part of the country, and most of the writing paper mills are located in that section. Producers of boxed writing papers are doing a rush pre-holiday business and are unable to cope with the demand for papers of this sort. Jobbers tell of experiencing increasing difficulty in acquiring supplies, and with the law of supply and demand holding full sway, prices are consistently advancing.

Book papers of all kinds are in pointed demand and mills are shipping out their product the minute it becomes available. The upward movement of prices is unchecked and consumers seem willing to pay almost any figure within reason to cover their wants. Tissue papers are firm and readily sought. Wrapping and other coarse papers are moving in steady fashion and at strong quotations. Cover papers are firm and in brisk demand.

Prices on board are rising. Eastern mills are obtaining \$65 a ton for chip board, and in some cases more, whenever they can make prompt deliveries. Most manufacturers, however, are out of the market, having sufficient orders booked to keep them engaged for several months, and being unwilling to enter into further engagements pending improvement in the fuel situation.

**GROUND WOOD.**—Offerings of mechanically ground wood are light and are quickly snapped up by anxious buyers, who, to say the least, are having difficulty in filling their needs. Grinders in the majority of cases are sold ahead for two or three months and are declining to accept additional orders excepting in an occasional way when they find themselves with extra lots of pulp on hand. Prices are strong, although it is a difficult matter to state just what actual market values are. Reports are heard of sales of spruce pulp at \$50 a ton at grinding plants, while on the other hand it is definitely known that business has been done at as much as \$60 f.o.b. pulp mills. Most local dealers are refusing to quote, having no supply at their command and finding it next to impossible to locate pulp to sell.

**CHEMICAL PULP.**—Chemical wood pulps have been in a little less demand this week. The tone of the market has lost none of its strength and there have been few lots of pulp offered which have not met with a quick sale, yet inquiry has diminished to an extent and demand has not been characterized with the snap that has been such a feature of the market for some time. Dealers and importers attribute this to consumers holding off in buying owing to the uncertainty resulting from the coal situation. With paper manufacturers in numerous cases not knowing whether they will be operating a few weeks hence, it is but logical that they should refrain from stocking up in raw material. Nevertheless, business of fairly good volume is current, and sales of unbleached sulphite of newsprint quality at \$75 a ton and of bleached sulphite at \$120 have been noted. Several sizable consignments of Scandinavian pulps have been received, but, having been sold to arrive, have had no perceptible influence on the market. Kraft pulp can probably be secured at slight reser-

sions in price but this is the only sign of easiness in quotations.

**RAGS.**—Demand for rags at present is rather divided. There is a keen inquiry for certain classes of material while other rags are being noticeably neglected by buyers. White rags of practically all qualities are moving. Old No. 1 repacked whites of choice quality are selling at 8 to 9.50 cents per pound and the indications are that there is not enough supply to go around. New white shirt cuttings also are actively sought and are bringing 15.50 to 16 cents a pound at shipping points. Another class of rags in good demand is roofing stock. Felt manufacturers are placing orders with apparent random and are granting decidedly higher prices. Sales in the East have been recorded at \$60 per ton for No. 1 packing, while Western mills have paid as much as \$68 in some instances for domestic rags. Most descriptions of new cuttings are moving steadily and at advancing prices. New blue overalls, muslins, silecias, white lawns and shoe cuttings meet with a ready sale and sellers say they are obtaining attractive prices. Old thirds and blues, on the other hand, are relatively quiet and quotations remain on a more or less stationary level, repacked blues being available at 4.25 to 4.50 cents at shipping points.

**PAPER STOCK.**—Waste papers are in a firm market position and prices on most grades have scored further gain during the present week. Consumers are buying in large volume and dealers and packers assert that regardless of the efforts pursued they are having trouble in locating all the material needed to satisfy the wants of customers. Shavings are up in price, 4.50 cents f.o.b. New York being about the lowest quoted on No. 1 soft white shavings now, while No. 1 hard whites are readily commanding 5.25 to 5.50 cents. Kraft paper has moved up a peg or two in value, sales of No. 1 packing of old kraft at 3.50 cents New York having been recorded, while flat stock of all kinds is actively sought and is fetching higher prices. Heavy books and magazines have sold at 2.50 cents New York and mixed books at 2 cents. Newspapers are firm and in good demand. Folded news is quoted at \$1 to \$1.10 per hundred pounds at shipping points, while overissue newspapers are worth 1.35 to 1.45 cents a pound and white news 2.25 to 2.50 cents. No. 1 mixed paper is being bought in large tonnage by board mills at a price range of 85 to 90 cents per hundred pounds New York.

**OLD ROPE AND BAGGING.**—The market for old rope displays a stronger tone and some consuming mills have advanced prices a shade, sales of No. 1 domestic Manila rope at 6.25 cents a pound having been noted. Old bagging continues quiet and prices are irregular, some dealers offering No. 1 scrap at 2.75 cents f.o.b. New York, with others refusing to sell for less than 3 cents.

### NOT AN ACCIDENT

Insurance man, putting question to a cowboy:  
 "Ever had any accidents?"  
 "No," was the reply.  
 "Never had an accident in your life?"  
 "Nope. A rattler bit me once, though."  
 "Well, don't you call that an accident?"  
 "Hell no! He bit me on purpose!"

Always bend nails down before throwing boards aside. Many serious injuries result in stepping on protruding nails.

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.

501 Fifth Avenue, Astor Trust Building  
Cor. of 42nd Street  
NEW YORK CITY

Buenos Aires, Argentine.

Are in a position to place large quantities of pulp for export  
for balance of this year and over first six months  
of 1920. Quotations solicited.

**TRADE INQUIRIES.**

Details can be had by Canadian firms by addressing the Department of Trade & Commerce, Ottawa, giving the number of the item.

**Boards and paper.**—A firm of wholesale board merchants and paper-mill agents in Nottingham, England, would be glad to hear from Canadian manufacturers of boards and papers of all kinds seeking an export outlet.

**Wall paper.**—Inquiry is made on behalf of one of the largest firms in Buenos Aires who buy largely in England and the United States, but now desire to get in touch with manufacturers of wall papers in Canada. Full particulars with prices, commission allowed, designs, time required for delivery and export terms. Catalogues must come by book post, otherwise duty has to be paid or rather fiscal stamps placed on each package by the receiver.

**Papers and Pulp.**—A Canadian resident in Japan, who has gone into business as an importer and exporter of pulp and papers, would be glad to hear from Canadian firms with reference to handling their products in Japan. This company has from one customer alone booked orders already this year with credits amounting to over yen 2,000,000 to cover purchases.

**Papermakers' felts, wires.**—Also other papermakers' supplies of all kinds are wanted from Canada by a well-connected Canadian importing house in Yokohama which has lately been organized.

A commission merchant of Cairo, Egypt, who is a British subject, and has been dealing largely in American goods, desires to obtain from Canada, among other articles: 500 to 1,000 tons newsprint, printing paper and envelopes; wood of all sorts, (planks, windows, doors or anything for constructing houses.)

**Chemical wool-pulp.**—An Edinburgh, Scotland, firm would like to secure an agency from a Canadian firm exporting easy bleaching sulphite wool-pulp.

**Newsprint.**—A correspondent in Sweden asks for competitive quotations from Canadian manufacturers of news paper in rolls 183 centimetres wide, 500 tons monthly.

**Millboard.**—A Manchester firm are open to purchase large quantities of millboard suitable for manufacturing cardboard boxes. Samples should be sent and prices must be c.i.f. Manchester.

**Cardboard.**—A Manchester firm manufacturing cardboard boxes can take large quantities of card-

board or similar material if samples and prices d/d Manchester are satisfactory.

**Lumber, wood-pulp, codfish and grain.**—A firm in Madrid with agencies in Barcelona, Bilbao and Gijon, desire to hear from Canadian exporters of codfish, lumber, wood-pulp and grain.

**Wood-pulp and lumber.**—A French firm with offices in Marseilles, Genoa, and Barcelona ask for Canadian wool-pulp and lumber.

**Wood-pulp.**—The most important importers of wood-pulp in Spain would be glad to receive offers from Canadian exporters.

**High-class paper and stationery.**—An English house at Madrid would be glad to enter into relations with Canadian exporters of paper and stationery.

**PAPER MILL MEN SPARE THE TREE!**

Save your clean waste paper for the beaters and thereby be a patriot. This is what H. L. Baldensberger, Chief of the Waste Reclamation Service of the Department of Commerce, says:

"Waste paper utilized in the making of paper material, serves as a good substitute for wood pulp. It require eight trees of mature growth to produce a ton of paper, and every ton of waste which can be substituted, will save eight trees for other purposes.

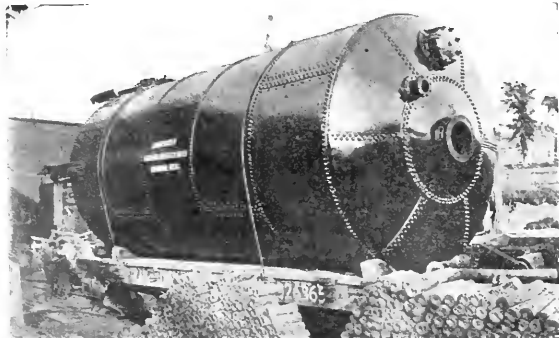
"In our urban centres we send annually to the dump thirteen tons of usable waste material for every thousand inhabitants, twenty per cent of which is waste paper.

"Based on the approximation of our population, we are sending each year to the dump 150,000 tons of waste paper, an amount that represent the loss in substitution of at least 1,200,000 trees of mature growth."

Conserve and utilize all the waste paper around the plants and you are helping to conserve our forests.

**SACRIFICE VIENNA FOREST FOR FUEL.**

Paris, Nov. 24.—The actual fuel shortage in Austria has resulted in mutilation of the famous Vienna forest by the desperate population, according to despatches from the Austrian capital to-day. So many trees have been cut out that restoration of the forest is considered impossible, the despatch said. The government has been unable to restrain the people from obtaining fir wood from the forest.



Pulp Mill Diffuser Supplied St. Maurice Pulp & Paper Co.

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# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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*Weighing standard roll  
of news print paper on  
Fairbanks Dial Scales.*

## Cut Time and Labor Costs

—stop and figure out the time wasted in weighing and computing weights. It amounts to considerable in a year.

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# EDITORIAL

## *THE SAFETY SECTION FOR ENGINEERS.*

The National Safety Council, to which many paper mills belong, is made up of a number of sections somewhat after the fashion of other national associations. One of the important divisions is Pulp and Paper Section. Last year Canada had the honor of furnishing the chairman of the section in the person of Mr. A. P. Costigane, Secretary of the Ontario Pulp and Paper Association, and this year is represented by Mr. G. W. Diekson of the Riordon Pulp and Paper Company, as vice-chairman. The Council is composed of both firms and individuals and through its work in the past few years has brought the Safety First Movement from what was considered somewhat of a fad to a position where it has now become one of the strongest forces in improving the welfare of workers and as a connecting link between management and men. There is probably no better common ground for effective effort between the workman and his foreman and superintendent than the chance of co-operating for the improvement of working and living conditions.

Improvements in processes and machinery, while they come largely at the suggestion of workmen, are necessarily developed by men of some engineering training and experience. This is just as true in making equipment safe as it is in making it effective. Among the firms and individuals making up the National Safety Council there is a large body of competent and specially trained engineers having to do with practically every phase of technical work. And every engineer is a potential safety expert of the best type. In order to unite the vast amount of experience and ability of these engineers in an organization which will be best able to advance the cause of Safety First there is being formed an Engineering Section of the National Safety Council.

The Technical Section of the Canadian Pulp and Paper Association should be deeply interested in this Engineering Section. The engineer is in many respects an interpreter for both the management and the men as he is at once an employee and a director of operations. On him falls the burden of inventing or applying safety equipment and he should be very closely connected with all safety work. A workman may recognize an unsafe condition, in some cases by observation, but usually only by experience and even then may not have any idea how to overcome the difficulty, and may not even have the sense to take proper precautions. An engineer should certainly be better able to anticipate trouble and should be qualified to remedy the situation, either by the invention of a proper safeguard or

the wording of directions to, and the personal instruction of the workmen.

The Engineering Section plans to bring together these engineers who form so important a part in one of the most necessary activities of our industrial organizations. It takes a chemical engineer to appreciate chemical hazards and know how to avoid them and while he may recognize a mechanical hazard or an electrical hazard, as a rule he would not be qualified to attack the problem in an intelligent manner. It frequently happens that one kind of hazard can only be overcome with the assistance of a person trained along another line, as, for instance, the frequent need of mechanical knowledge in working out a chemical process. There is further not only room but actually need in the Engineering Section for all kinds of engineers and we are quite confident in assuming that among the pulp and paper mills will be found some of the most enthusiastic and helpful members of the new section. The Technical Section now has a committee on Mechanical Standards which has already recognized important possibilities of improving the safeness of machinery. It is but a short step therefore to the enrolling of such men and many others in the new division of the Safety Council. This should have the full support of the members of the Technical Section and particularly of the mills employing engineers in any capacity. The qualifications for membership are severe enough to insure a high standard while being sufficiently liberal to bring in all of those whose membership is likely to contribute to the value and effectiveness of the Engineering Section. It is a pleasure to know that Canada and the Pulp and Paper Industry is represented on the Executive Committee by Mr. Costigane and we are confident that he will not only bring his broad experience and excellent qualifications into a very useful field, but that he will have the full support of the technical men in the whole Pulp and Paper Industry.

## *SOURCE OF PAPER ON "FUNGUS IN PULP."*

The omission of a paragraph from the Pulp and Paper Magazine for November 27 makes it appear that the article on "The Destruction of Wood Pulp by Fungi" was written specially for the Magazine. That is not so. It is an extract from a paper read by Dr. Kress at the Fall meeting of the Technical Association of the Pulp and Paper Industry, which should have been given credit for it.

This subject is to be discussed at the annual meeting of the Technical Section of the C. P. & P. A. in Montreal next month.

### WILL THE SWORD DROP?

Since the famous case described in Greek literature there has been no more interesting instance of the suspended sword than that which has been dangling over the heads of the Canadian newsprint manufacturers for the past three years or so. Not satisfied that their natural respect for the law would be sufficient to persuade the manufacturers, if they were at all recalcitrant, to comply with certain orders-in-council, a sword has been hung over their heads. It has been held by a stout string, however, no less than the honor of good citizens. Of course the trouble was about the price and distribution of newsprint in Canada, principally about the price with the other consideration originally largely a "blind." Now the assurance of a supply is the important point. This supply is a very uncertain quantity, largely because the manufacturers have been discouraged as to extension of plant and because, owing to price restrictions in Canada, are looking for more equitable compensation elsewhere. If any of them fails to supply its shares to Canadian customers that mill is threatened with being prohibited from exporting any of its product.

The whole trouble comes down to the price of newsprint in Canada. The manufacturers are tired and sick of being obliged to meet part of the legitimate expense of newsprint to publishers especially when doing so is simply enabling the papers to carry more advertising and make correspondingly bigger profits. The publishers can get the paper if they will pay a fair price. Otherwise there will be continued difficulty in their getting supplies, from what appears to be the trend of feeling. If the newspaper is such an important public necessity as the Government seems to think and the publishers are too impecunious to pay their bills, let the subsidy be borne by the whole public; not by a very small group. Perhaps then the people will ask and determine whether such support is really necessary.

As for putting such an embargo into effect, let two or three mills close down and we believe there would be such action by the United States Government urged immediately by the American publishers, and very likely taken, that the Government supporters of Canadian publishers would find themselves in a very uncomfortable position in the eyes of the general public.

The situation is very well expressed in the following editorial from the Montreal Gazette of Dec. 16:

#### The Price of Newsprint.

It would be difficult to find a more convincing example of Government blundering than is afforded by the restriction in the price of newsprint to Canadian publishers. Here is one of the most important industries in the Dominion, an industry indigenous to the soil, an industry which has grown so rapidly that week-export of its product now reaches \$1,000,000, and yet this great industry is threatened to be throttled if any manufacturer has the temerity to disregard any order issued by the Paper Controller. In a moment of

weakness, or in fear of the power of the press, the Government strained the War Measures Act by appointing under that authority a Paper Controller, directing him to limit the price of newsprint to Canadian publishers and to arrange that they be always supplied with as much paper as desired at the fixed price. Now, if this be sound policy why was it restricted to feeding the mind? Mental pabulum is an excellent thing, but not so essential as food for the body. Why did not the Government empower and direct a Food Controller to fix the price of wheat and beef and bacon and dairy products at a low figure for home consumption and prohibit exports of foodstuffs until the Canadian people were gorged, allowing the producer to sell thereafter his surplus abroad at prevailing market prices? The two cases are identical in principle, differing only in the number of voters affected.

Needless to say, the policy of the Government in the matter of newsprint is utterly vicious. Newspapers ought not to be placed in a privileged class, even if they do wield influence enough to make Ministers quail. Newspapers are a commodity like any other merchandise. If his raw material, newsprint, rises in price, the publisher has the option of reducing the size of the publication or increasing the selling price. Not the slightest effort has been made by publishers to meet the situation by the former course and the worst offenders in the unnecessary consumption of paper are in the Northwest, whence the complaint of shortage of supply has come, leading to the new prohibition on exports. What right or reason have newspaper publishers to ask special treatment from the Government, treatment that means bonusing of their business at the expense of the manufacturer? Infinitely more rational would be a demand from urban dwellers that bread and meat and milk should be supplied them at less than market price at the expense of the farmer.

The paper-making industry, greatly as it has grown, would have had a still larger expansion during the last two years but for the meddling and muddling of the Paper Controller at the instance of the Government. It stands today in the forefront of exports of manufactures. It is an industry to be stimulated, not discouraged. One could understand the undignified attitude of many Canadian newspaper publishers if the paper manufacturers were in a combine to unduly enhance prices, or if they sold their product for export below the home consumption price; but these things are not alleged, nor does such a condition exist. Domestic requirements have first call. What the manufacturers do rightly complain of is that of all Canadian products, whether of farm, forest, fisheries or factories, theirs alone is singled out for discrimination, they only are compelled to sell their goods below the figure obtainable abroad. If the price of newsprint to Canadian publishers is yet longer to be restricted, they equally should the Paper Controller restrict the consumption by limiting the size of newspapers, and if publishers contend such action would be interfering their business, equally can the manufacturer retort that the course of the controller is unjustifiable interference with theirs. The order-in-council which has produced the friction should never have been passed. More than that, it should not have been solicited and until it is rescinded neither the press nor the Government will, in this regard, cease to stand in a pitiful position in the public eye.

# Cost System as Aid to Paper Mill Superintendents

(By W. T. SCHMITT, American Writing Paper Co.)  
(An Address to the Paper Mill Superintendents Association.)

I have been asked to address you gentlemen on the subject of Cost Systems in Paper Mill. I do not propose to enter into a lengthy discussion of the relative merits of the various methods of Cost Finding as practiced by different concerns. I do not think you would be interested in that phase of the subject. Any cost system which is built upon recognized fundamentals and essentials and gives you correct results and helps you to make a better product at the cheapest possible price will fill the bill as far as you are concerned. I suppose that almost all of you are satisfied to leave the working out of the mass of details to your dear enemies the Cost Accountants. What all of you, however, are, or should be, interested in is the cost of the product you are making, what most of you are not interested in is the method of cost accounting, and what many of you positively dislike about cost systems is the Cost Accountant. I have already referred to your dear enemy, the Cost Accountant.

There is no denying the fact that in the past there has been a little antagonism between Paper Mill Superintendents and Cost Accountants. The fault as is usually the case was more or less mutual. Many of the older cost system were not sufficiently flexible for the needs of an industry as complex as the Pulp and Paper Industry undoubtedly is. Many of the Cost Accountants thought that a Paper Mill could be run some what like a set of accounting books, and that as long as they had worked out a Cost System that worked beautifully in theory that all they had to do was to install their system in the mill; provide a plentiful supply of complicated forms which to anybody who had not studied modern accounting methods looked like inscriptions on an Egyptian tomb and the thing was done.

In other words they tried to make the mill fit the system. Then when results were less than zero they would raise a holler about lack of co-operation on the part of the Superintendents. On the other hand there is no denying the fact that many of you gentlemen have not given to cost finding the serious consideration which owing to its great importance this subject is entitled to. Many of you have been a little suspicious of the Cost Accountant and disliked to have him prowling around in the mill studying the manufacturing processes. Some of you undoubtedly were afraid of interference with your ways of doing things.

When we started to install our new cost system at the De Pere plant, our Superintendent, Mr. Charles Garvin, reminded me very forcibly of a part of an old nursery rhyme about the man in the moon who sails in the sky. The part I am referring to is "and the big bear growled." Well, gentlemen, that was in the beginning, but the big bear is not growling any more. He has recognized the benefits that he is deriving from our system and the help that it is giving him.

I was reading the other day the excellent paper on the Pulping of Hemlock Wood by Mr. O'Connell and was very interested in what he had to say about the relative importance of the two questions, how much sulphur are you using per ton of pulp, and how much pulp are you producing per cord of wood. Well, gentlemen, right here is where an effective cost system steps in and not only provides the answer but brings out strongly the relative importance of the

points. It certainly shows up the high spots and provides an antidote for pre-conceived or suggested ideas as to what is important in the manufacturing process.

It would require some salesmanship to make an executive believe that the article the salesman is selling is of prime importance when the monthly cost summaries which tie up with the ledger and therefore with the profit and loss account deny this statement and deny it convincingly and insistently.

Another point that suggested itself to me was in Mr. Bert's very interesting paper on a standard quality of chip board. Mr. Bert referred to the so-called improved methods of sorting raw stock now being practiced by the large packers and the great difference in the quality of various lots received. Here also an efficient Cost System is invaluable to you. You know though personal observation that a certain lot of raw material is not up to standard and lodge a complaint with the purchasing department. But can you tell just how bad the lot was, how much more it cost you to sort this lot than an average lot, how much it retarded your production thereby boosting the cost?

An effective cost system will give you correct analysis of every lot which passes through your sorting department, thereby enabling the purchasing department to get back at the shipper and eventually weed out the trusting souls who profess to believe that board or paper can be made from rubber boots or horse shoes. As Mr. Bert says, if you want to standardize your finished product you have to begin with the standardization of your raw material and in order to set up certain standards you have to have reliable data which an efficient cost system will give you.

I will take a fine paper mill for example. The rag report will show you at a glance whose rags are good from your point of view and whose rags have been subjected to the improved methods of certain packers. Your report will show you exactly how many pounds of baled rags it took to get a bleach of say 10,000 lbs. of thirds and blues for instance, the weight and nature of the out-throws and the number of hours it took to sort the bleach, and finally the average weight and price per ear of boiled rags as they leave the botaries.

From these reports you can easily establish standards, that is to say; you can stipulate that the amount of out-throws should not exceed a certain percentage of the baled weight, that the rag room cost, in other words, the number of hours it should take to sort a bleach of any given kind of stock, should not exceed a certain amount. Shipments that do not come up to these established standards are then automatically reported by the Cost Department to the Purchasing Agent with all the supporting data, the shipper can be warned, a charge back can be made and in case of repeated offences of the description the shipper's name can be taken off the list of supplies.

The same principle, of course, applies to all other materials used in the manufacture of paper and in this way a good cost system will help you to standardize your raw materials. You not only have to standardize your furnishes. In theory this is a simple thing but your know better than I do how difficult it is to translate this theory into practice.

Again I take a fine paper mill for an example. Here you have quite a formidable number of standard

grades for which you have worked out standard furnishes. How do you know that your instructions are being followed conscientiously all the time unless the consumption of the various raw materials as shown on the monthly summaries of beater orders tallies with the consumption of the various raw materials as shown on the monthly summaries of beater orders tallies with the consumption shown by the monthly inventories? You specify in your standard furnish 1 car of one kind of stock,  $1\frac{1}{2}$  cars of another kind, and  $\frac{1}{2}$  car of yet another kind, and so many pounds of a certain grade of sulphite. How do you know that the car weights for every engine are approximately the same? You know that if you start digging from the top of a drainer that has been standing for some time you have more volume of stock to fill your beater than when you dig from the bottom or up and down. The latter I guess is the method most in use.

Here again the Cost Accountant helps you with a system of car equivalents, an accumulation of figures which eventually gives you the correct average weight for every car of stock regardless of grade, provided, of course, that all stock is dug in the same manner. Then there is the question of machine broke coming back into the beaters. In the case of a high rag content paper the machine broke may cause quite a difference in the quality of the first few thousand pounds as compared with the balance of the run unless the furnish for such beater engines as receives a fair supply of machine broke is changed so as to neutralize the effect of the machine broke. Here again an effective cost system will give you the closest control and help you to standardize your furnishes.

Speaking of broke, I know that this is a subject of equal importance to all of you. Any Superintendent who says that he makes no broke and is not interested in the subject runs the danger of being bracketed with Ananias. There will always be broke in a paper mill and lots of it, and while a cost system cannot prevent broke, from being made, it is the most effective barometer that you could wish for. It will tell you in detail where the broke is made and when, and in many instances, the reason. It will tell you how much machine broke there is in the total, how much calender broke and the cause of same, and how much sorting broke and the reasons for it. There may be many reasons, dirt, crushed sheets, wrinkled sheets, uneven sheets, off color, etc., and these reports that come to your desk from the Cost Department every morning show you correctly and insistently where it is necessary for you to take steps to remedy the fault. If the dirt is due to careless sorting of rags, here is your chance to go right after the machine tender, here are the figures which they cannot argue against.

Perhaps the paper is being sorted too closely because the customer demands a sheet that is rather better than the price he is prepared to pay warrants. Well, here are your figures right at the beginning before any great damage is done and large contracts accepted by the sales department. The figures show that the thing cannot be done at the price and it is up to the Sales Department to convince the customer. Then there are the comparative statistics which a good cost system will give you without any additional trouble. You know, of course, from your machine reports how much paper is made per inch per hour. But do you know the efficiency of your super-calenders, sheet calenders, cutters, etc? These details are contained in the figures which the Cost Department has to complete anyhow in order to get correct costs

and they provide excellent help to you in detecting and weeding out loafers.

An effective cost system is the most valuable servant that you Superintendents can wish for if you will only use it right. You have your fingers on the pulse all the time, there is no operation that is not analysed for your benefit, there is no argument that you could wish for in the discussion of your manufacturing methods that an effective cost system will not readily supply and there is this further point, a point which you are vitally interested in because it affects your pocket books, and this point is that you know all the time whether or not you are making money. Your cost reports show you if you are getting dangerously near the limit and almost invariably show you at the same time the reason why, and right then is the time for you to get busy, and tip the scales the other way.

I suppose that most of you have some kind of a bonus agreement. Now I ask you, gentlemen, is it not a nice feeling to know all the time that your bonus is a certainty. Would you not rather have this certainty that be dreaming of a limousine and at the end of the year this limousine fade into a flivver or worse, if there is such a thing. One objection that I have heard a good many times is that the cost reports are nothing more than a post mortem, something like a Coroner's inquest. Well, that was true to a large extent of the older systems and the reason was that these systems had not been in use very long and did not go quite far enough.

Cost Accountants after all are not prophets and cost accounting is an exact science. Before any science can become exact and thus useful, reliable data have to be collected that represent actual happenings over an extended period. These have to be carefully analysed and classified and then they can be used for intelligent cost estimates. This, however, takes a little time. A cost system to be useful and effective should be an evolution and not a revolution. As Mr. Hutchinson, the treasurer of our company, said at one of the meetings of the Cost Association, you can put in a cost system over night but it won't cost you a lot of money. Time is needed to collect the data and the data have to be supplied by you and those under your direct control.

The best Cost Accountant is helpless without the hearty co-operation of the Superintendents. The more heartily you co-operate, the sooner will you get correct cost figures and correct cost estimates are based on actual manufacturing experience in your own mills, based on data supplied by you. They represent actual facts and there is no guess work about them. Take for instance a rag content paper. You know that there is waste in every kind of rag, new or old. The Cost Department has collected data to show the percentage of out-throws for every kind of rag that you use.

Now if you take a lot of 10,000 lbs. as a basis and you say that you need so many thousand pounds of this kind of rag and so many thousand pounds of that kind, it stands to reason that you mean dressed weight. On the other hand, the cost of the out-throws sorted out of the baled rags has to be considered and a percentage has to be added to the net cost of the dressed rags to take care of this difference. To this you add your average conversion cost, also compiled by the Cost Department, and you arrive at your estimated cost of half stuff. Then you proceed to the furnish. You know that different kinds of rags have different yields.

The percentage of shrinkage during the various manufacturing processes up to and including drainers has likewise been compiled by the Cost Department. If your shrinkage be 15 per cent it stands to reason that a net quantity of say 5,000 lbs. suitable for the beater represents about 5800 lbs. of half stuff plus out-throws from baled rags. The latter have been taken care of in half stuff estimate and the shrinkage has to be taken care of in the furnish estimate.

After adding the cost of the pulp you arrive at the total cost of fibre to which you add your process, supplies, color, etc. You know now that you have 10,000 lbs. of furnish ready to go on the paper machine and from your machine reports you get the actual weight of rough paper made and you will find that there is a shrinkage. This shrinkage appears to be particularly high in cheaper grades that contain clay filler, more especially if the furnish was not properly sized.

You add to this your machine conversion which includes beater and jordan charges, tub sizing, drying and all finishing charges, absorbing as you go along the estimated percentage of broke for every department, your charges for general finishing and you arrive at your estimated manufacturing cost to which is still to be added the cost of packing and shipping.

These estimates will form the basis for the sales price to be established by the Sales Department. The sales prices including, of course, additional items such as general overhead, cash discount, freight, etc. The importance of these cost estimates, from your point of view, lies in the fact that they serve as a constant check on every department. They give you estimated average costs for every manufacturing department and the individual production reports which are figured out daily by cost department show you whether or not you are keeping within a reasonable margin of your estimated cost.

I know that many of you have highly efficient cost systems in your mills and that you are thoroughly familiar with the workings of such a system. To those of you not familiar with the subject, all this may sound rather formidable but it is not so in actual practice. We have a pretty complicated mill at De Pere where we make pole-dried, air-dried, and machine-dried papers, all of which have to be kept rigorously separated in our Cost Accounting. We have from 500 to 700 production orders per month and yet all this work is taken care of by a cost clerk, a young girl and a calculating machine. I admit that our cost system is highly refined but we need that kind of a system in our concern. You may not need anything so elaborate.

In fact, the simplest kind of a cost system will do for many mills as long as it is based on the correct fundamentals and essentials. But in your own business and for your own protection you should insist on having an efficient cost system in your Mills and bear in mind that the Cost Association of the Paper Industry is ready and willing to give expert assistance to anybody wishing for same. No matter where you will be situated or what your troubles may be there are willing experts at your disposal who will install new systems, overhaul existing systems, help you to solve difficult problems if you will only let them know your needs.

There are local organizations affiliated with the cost association almost everywhere now. meetings of cost men are held at regular intervals when knotty points are discussed and ideas interchanged. See to

it that your cost man attends these meetings regularly. drop in yourselves when you feel like it, you will be surprised at the benefits that you personally can derive from this and the valuable practical aid that you can give to the cost men. You have nothing to fear from any cost system. If your manufacturing methods were faulty you would not be in the prominent positions you now occupy.

It is for you to tell the Cost Accountant the things you do and he will tell you how much it costs to do these things. It is not for him to suggest that things should be done in this way or that; it is for him to apply the correct principles of cost finding to the data furnished by you and devise a system that will meet the conditions peculiar to your particular Mill. Co-operation in this as in all other things spells success and the closer the co-operation between your and your Cost Department the greater the benefit to yourselves and your Companies. Bear in mind that a mill that is making money and plenty of it can and does command the best talent in the country and sound manufacturing methods backed up by an efficient cost system will carry you to the pinnacle to which you all aspire.

#### POSSIBILITIES FOR PAPER PLANTS IN THE WEST.

In commenting on the opportunities for the development of the pulp and paper industry, the "Medicine Hat News" said a few days ago:—

"In the interior of eastern parts of British Columbia, and more especially along the lines of the Canadian Pacific Railway through the Crow's Nest Pass, as well as in the central parts of Alberta, Saskatchewan and Manitoba, there are large areas of suitable timber available. In addition to this there are nearby water powers and railway transport to make easily obtainable suitable locations for mills and economic methods of handling both the raw material and the finished product.

"Western Canada has the wood and the water powers, it also has the rivers and streams for driving the logs, and means of transportation by rail is getting more efficient and easy of access year by year. Pulp and paper can be produced as economically in the west as in any other part of the Dominion. It is an industry which will stand the fullest investigation. The market's demand is incessant and growing yearly by leaps. The Canadian capitalist must hasten the development of paper mills in the west, and take advantage of the great home market there is there for paper products.

"In Western Canada there are over 550 daily and weekly newspapers and magazines published with a daily, weekly and monthly circulation of over 1,000,000 copies. The construction of new railroad lines continues at the rate of 1,000 miles or more per annum (branch and main lines), and new towns are opened up at the rate of 150 to 200 each year. The larger proportion of these towns grow into the newspaper stage at a very early date. The demand for paper of all kinds within the next ten years will be enormous, and should be the means of supporting a large number of paper mills, as well as building up thriving communities."

Before empty acid carboys are loaded for returning care should be taken that they are empty. Leaving acid in them wastes acid and endangers those who handle the carboys.

## Pringle Would Make Price at Least \$75

It was intimated at the newsprint enquiry Tuesday, by Commissioner Pringle, at the Windsor Hotel, that he and the Government are anxious to drop Government control of the industry and the fixing of prices, but that this could not be done as yet, without producing a chaotic state of affairs. Mr. Pringle refused to issue any order fixing prices, but intimated he would make suggestions as to price to the Government, and leave it up to them to settle the matter and take the responsibility, remarking if he were to fix the price it would not be less than \$75 a ton. He further intimated that he was preparing to drop the work, and would clear up the matters now before him, after which his business with the inquiry would cease.

Sharp criticisms of the paper control were made during the meeting, Mr. Aime Geoffrion, K.C., for Price Bros., Quebec, challenging the jurisdiction of the Government in such matters, and intimating that his clients would refuse to obey any orders issued.

Mr. Henderson said:—"Since Mr. Geoffrion has stated his position so definitely for Price Bros., I will state my position for the Booth Company. We have always queried the jurisdiction of this Commission, but during wartime we submitted as a voluntary act, without admitting jurisdiction."

Commissioner Pringle asked: "Surely the Government has the power to license exports?"

Mr. Henderson replied:—"Absolutely not. There is no power in Parliament to prohibit an export today of newsprint, or say that J. R. Booth cannot sell his newsprint where he pleases."

Senator Ross said that even though a state of war existed, and admitting that the Dominion Parliament during wartime had such powers, it is apparent that hostilities had ceased.

### Mills Stopping Supply

Mr. Montgomery stated that the gist of the whole matter was the great difference in price between Canada and the United States. Canadian mills bearing more than their share of the financial burden of supplying Canadian papers did not wish to continue longer making such a sacrifice.

After some discussion as to percentages to be sold in Canada, Commissioner Pringle said: "Every mill must produce its proper quota for Canadian tonnage, or suffer such penalty as the Government imposes. If they are not satisfied they can go to the courts and fight it out."

Publishers in Canada, said Commissioner Pringle, did not seem to have paid sufficient attention to this condition. The estimates for newsprint in Canada for 1920 were vastly ahead of those for 1919, which in their turn were greatly ahead of those for 1918, while there was no evidence of any attempt to economize.

### Intolerable, Says Eddy Co.

Mr. J. F. Orde, K.C., Ottawa, made a statement for the Eddy Co. He said that it had been recognized that there was difficulty in securing proper distribution, in face of the "recognized injustice of a reduced price for Canada," and provision had been made for the payment of differentials between mills. The Eddy Co. practically sold its full output in Canada, which put them at a disadvantage as compared with exporting mills. The Eddy Co. had loyally followed the orders and sold its output to Canadian publishers

at the fixed price, while other mills were reaping much larger profits in the United States, while the Eddy Co. had at times to sell at a loss, or at a very narrow margin of profit.

"The situation has now become intolerable," said Mr. Orde, "and the Eddy Co. has made up its mind that in future it will not supply to the Canadian consumers more than its proper quota of its 15,000 tons annual output. The Eddy firm supplied about 100 Canadian publications, large and small, and had received recently orders far above normal. They had notified these publications that during the present month they would fill orders at the Controller's price, but that after this month the publishers must look elsewhere for their supplies. The firm would select their customers for the necessary 12 per cent to be sold in Canada, and tell the rest it could not supply them with more."

Mr. P. B. Wilson, of the Spanish River Pulp & Paper Co., said that the whole trouble was that the price here was fixed lower than they could get elsewhere. The solution was that the publishers would get the paper if they would pay the price.

This ended the general discussion, and Commissioner Pringle closed it by saying he did not propose making any order.

"I purpose making a recommendation to the Government," he said, "and if they see fit to make an order and take the responsibility, it is their's not mine. I have doubts as to my jurisdiction or how long it will last, and when I am asked to make an order for six months I have grave doubts as to whether my jurisdiction would last for that period. Therefore, it seems to me the responsibility rests with the Government."

### Would Fix Reasonable Price

"If I were fixing a price," said the Commissioner, "I would fix not less than \$75 a ton, knowing conditions as they are, and I am satisfied the larger publishers would be satisfied to pay that if they were absolutely sure of their supply. I would suggest to the Government to get away from questions of actual cost and reasonable profit and fix what they consider a reasonable price under the circumstances."

### FRENCH PAPER MILLS STRIPPED BY HUNS.

Mr. Clarence Kinne, secretary of the Bagley and Servall Co has just returned from a business trip to France.

"Business in France is good. There is lots of money circulation, but the people think that they are the only nation in the world that is hit by the high cost of living," said Mr. Kinne. "As a matter of fact the costs are no more than here."

"Some of the paper mills in the devastated section of France are again in operation and others are being rebuilt as rapidly as possible. I was in one mill where the Germans had taken off six machines and one of the machines was recovered. I was in another mill which the Germans had stripped, taking three machines. Not a pound of machinery was retrieved there. One mill which was destroyed estimated that it would cost about \$5,000,000 to replace it without counting the loss of business for five years."

Because of the longshoremen's strike in New York Mr. Kinne was compelled to wait in the harbor at Havre three weeks before he could sail for home.



## Will a Stone Roll Work?---It Will

The following data is furnished by Mr. W. B. Campbell, of Process Engineers, Montreal, in answer to the query in last week's issue regarding the use of stone rolls on wide machines. He has given more information than was asked for, but the additional remarks will be of interest.

One of the fruitful sources of breaks on a paper machine trouble is at the wet presses.

The ideal wet press should permit the employment of any desired pressure on the sheet, without causing it to stick to the top press roll, or to break. The pressure should be even and uniform. With most classes of papers the drier the sheet can be made in the wet presses, the better it improves the feel and strength: less work remains to be done by the dryers, and the many advantages of drying at low temperatures and with a reduced steam consumption are attained. It is true that the life of the wet felts is slightly diminished by the use of high pressures at the wet presses, but this drawback is far outweighed by the advantages secured.

It is clear, however, that increased extraction of moisture in the presses cannot be economically effected at the expense of frequent breaks of the sheet.

A single break in a news machine 200" wide, running at 600 ft. a minute, represents an appreciable loss. While this loss is perhaps more apparent in a fast running machine, it is scarcely less important in a slow machine making better class papers, which have a correspondingly higher value.

Breaks must be avoided, and at the same time the sheet must have a good finish.

The original Fourdrinier machine was equipped with iron or brass top press rolls, and, notwithstanding the enormous strides that have been made in many directions in its improvement, little improvement has been made until a few years ago, in connection with the wet presses. Numbers of machines are still fitted with brass and steel top press rolls. Countless experiments have been made with doctors of every conceivable kind to keep the rolls clean, so as to avoid the sticking and breaking of the sheet. Some degree of improvement has indeed been attained in this way; but the heart of the trouble lay all the time in the material of which the top press roll was built.

With the development of the fast-running news machine wood became perhaps more widely employed for top press rolls. The primary object of this was to reduce the cost of these large rolls, but it was also found to slightly minimize breaks. The paper adheres less to wood than to metal because air is confined and compressed in depressions in the wood as explained later in connection with the stone roll. Wood, however, has many disadvantages.

Wooden top press rolls crack and wrp. They wear very rapidly and, even with the utmost care in the selection of the log, the wear is nearly always uneven, necessitating constant retrimming and frequent renewal of the roll. Furthermore considerable difficulty is experienced in firmly securing the trunnions on the shaft in a wooden roll. The enormous width of the modern machine, and the consequent difficulty of finding suitable logs accentuates these drawbacks. Moreover, with practically unbeaten stuff containing free rosin it is particularly difficult to keep wooden top press rolls properly doctored and clean.

About 15 years ago experiments began to be made with the use of certain classes of stone for top press rolls. A large number of different stones were tried, and finally a special type of natural porphyry was found to be the only stone to really meet all the exacting conditions required.

The following is a minor example of one of the difficulties met with. During the tests a certain stone was tried. It appeared for a time to be perfectly suitable. After being used for a while, however, the sheet commenced to show discoloration and this was eventually traced to excess of iron in the composition of the natural stone of which the press rolls were built. That fact alone, of course, rendered the stone unsuitable.

During the exhaustive trials it was found, that while several classes of stone worked and even worked well for short periods, eventually the surface commenced to disintegrate. Fine particles of stone began to break off into the sheet, soon followed by larger pieces and the roll became useless. A further and most important problem presented itself with the employment of stone.

With metal rolls the securing of the shaft of trunnions to the body of the roll was a simple matter. With stone it was found that no ordinary method of construction would do, if immovably true trunnions to withstand high pressures and speeds were to be obtained. The trunnions were apt to loosen and, in some cases, the stone roll itself broke.

In the end the complete solution of this problem also was found: It embodies a solid through-going steel shaft, fastened to the stone in such a way that any shifting is quite impossible. The hundreds of Marx crystalline stone wet press rolls, some of which have been at work for many years, are proof of the perfection of this fastening, as well as of the entire suitability of the special stone employed.

The theory of the action of the stone wet press rolls may be of some interest. The surface of the roll, although highly polished and of great toughness, possesses a large number of tiny depressions, or interstices. These are so small that there is not the slightest trace of them visible in the sheet, but they are nevertheless responsible for the entire absence of sticking at the presses, even with the highest pressures. As the sheet is nipped between the press rolls, the air in each of these small interstices in the top stone roll is compressed. The moment the sheet passes out from the nip, the air expands again and pushes the sheet off the surface of the roll.

The stone being so hard, wear is exceedingly small and must always be even, along the whole face. Any ordinary doctor can be used. A medium hard bronze doctor is recommended as very suitable, but this material is not essential to the efficient working of the rolls. Regrinding of the face is very seldom necessary. When required it can be carried out on an ordinary roll grinder, with an ordinary grindstone, without any difficulty. In short, these crystalline stone wet press rolls really approximate to the ideal requirements laid down at the commencement of these notes. They not only are a material source of economy from the point of view of production and maintenance; but they also give an improved finish to the sheet. The latter is an effect of more outstanding importance with some classes of papers (such as book

papers than with others; but with no class of paper should it be disregarded.

Finally, Marx crystalline stone wet press rolls are made with unvarying and complete success for every grade and type of machine, from a narrow laboratory paper-making machine, such as at McGill University, to a 24" roll for the largest modern fast running news machine.

**THREATENS TO STOP NEWSPRINT EXPORT.**

The Canadian Pulp and Paper Association headquarters in Montreal was notified on Saturday that the Government at Ottawa had issued a new order-in-council empowering the Minister of Customs to stop the exportation of newsprint paper from any manufacturer in Canada who fails to comply with any order issued by the Paper Controller. This is the second time that an embargo on the export of newsprint has been invoked in order to enforce the rulings of the controller.

The new order arises out of attempts by the Paper Controller to compel the manufacturers to continue supplying Canadian newspaper publishers with paper at a price considerably below that obtainable for the same paper sold for export, and the notification, served upon the controller by certain of the manufacturers, that they will cease on the first of January next to supply paper in Canada on any such conditions.

Certain western newspaper publishers, who have had difficulty in obtaining their supplies of paper at the Government fixed price, have also invoked the powers of the Board of Commerce in Winnipeg with a view to getting that body to determine what is a fair maximum profit for a ton of newsprint. The board has already laid the foundation for such interference, by formally declaring newsprint to be a necessary of life within the meaning of the Act constituting the board, which it is empowered to do with any commodity. Should the board proceed upon the request of the western publishers it may undertake to determine the selling price of newsprint in Canada despite the fact that a controller already exists for that purpose and that the controller's findings are already subject to appeal to the paper control tribunal, a court specially set up and authorized to deal with the subject. This control has been in existence for nearly three years and was originally instituted as a war measure under the authority of the War Measures Act.

**Settlement not so Near.**

Meanwhile some of the manufacturers, who have long chafed under the somewhat unusual restrictions imposed upon their industry, are preparing to combat these latest attempts to control their right to conduct their business in their own way.

The Fort Frances Pulp and Paper Company, Limited which operates a 150-ton-a-day mill at Fort Frances, Ont., has issued a writ, directed against Controller Pringle, the Minister of Justice and the Manitoba Free Press Printing Company, which is designed to test the question of whether the War Measures Act is still in existence insofar as the regulation of the sale of newsprint paper is concerned, inasmuch as the war has been over virtually for a year or more. This writ was to be served Monday. The outcome of this action may have far reaching effects since it will necessarily raise the whole question of the validity of the extension of the War Measures Act beyond the actual cessation of war.

From the foregoing, it will be seen that a peaceful settlement of the controversy which has involved the paper manufacturers and the newspaper publishers of Canada for the past three years is no so near as it appeared to be a few weeks ago. The whole trouble is said to arise out of the fact that there is a world-wide shortage of newsprint paper at the present time, leading to an extraordinary demand and usually high prices in the open market. Publishers in the United States who have exhausted this year's contract allowances of paper find it difficult to get temporary supplies to tide them over, and are bidding high for any available tonnage. The contract price, for both American and Canadian-made paper, in the United States for next year's supply, now ranges from \$80 to \$90 a ton. The Canadian manufacturers, however, under the guise of a war measure, are still compelled to supply Canadian publishers with paper at \$69 a ton, and claim that they are thereby deprived of the opportunity of obtaining from \$11 to \$21 a ton more for it in the open market. Since Canada is now consuming about 85,000 tons of newsprint a year, this is said to work out at a loss to the manufacturers at the rate of from \$935,000 to \$1,785,000 a year, depending upon whether the maximum or minimum price is taken as the basis of calculation.

**Output 800,000 Tons Yearly.**

Canadian paper mills are now turning out approximately 800,000 tons of newsprint a year, of which, as has been stated, not more than 85,000 tons are consumed in Canada. The great proportion of the remainder is exported to the United States. Exports of paper for the first nine months of this year, not all newsprint, reached a total value of \$42,884,409, an increase of \$10,862,144 as compared with the corresponding period of 1918. They average more than \$1,000,000 a week. The manufacturers claim they have always made concessions to their Canadian customers, whether under Government compulsion or not. They say, however, that every attempt to restrict the price in the home market has had a corresponding ill-effect in the export market. They instance the fact that in the States an agitation is on foot to retaliate against Canada's discrimination in the price of paper by creating a similar discrimination in the price of American anthracite coal supplied to this country, Congress having already been petitioned to take action to that end. They also say that in New Zealand the newspaper publishers have asked their Government to rescind certain tariff preferences accorded imports from Canada on account of the fact that Canada sells paper cheaper at home than it does in New Zealand, arguing that the cheap price given to Canadian publishers is made up in part by an excessive price charged against New Zealand customers. Other countries are taking a similar attitude.

The manufacturers also say they cannot understand why an industry which is creating foreign business for Canada at the rate of \$5,000,000 a month, chiefly in the United States and performing a valuable service in helping to offset the present adverse trade balance against Canada in that country, should not be permitted to export to its fullest ability. They say that the troubles between themselves and the publishers and the Government in Canada will never be definitely settled until the situation is looked at and treated from an international standpoint and not from one of domestic convenience only.

An argument generally takes a curious form. It always has two sides, but only one end.

# Making Paper From Waste Sugar Cane

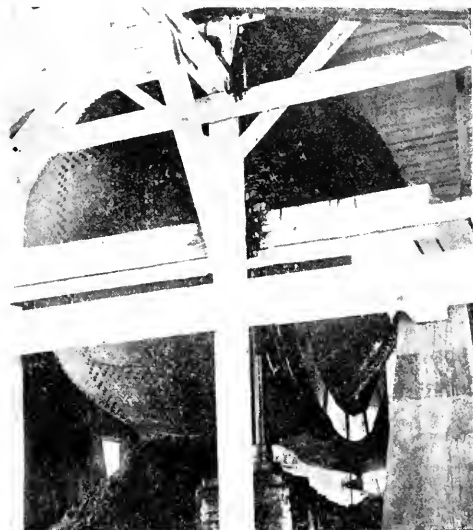
By CHAS. W. MASON.

Readers of the Pulp and Paper Magazine in some of the mills in Canada, Scotland and the United States will remember Mr. Mason, who is now superintendent of the interesting paper mill which is described and illustrated in this article. The great success of the use of paper for killing weeds in the cane fields has had wide publicity through articles in the Scientific American, Literary Digest and the paper journals. We are to have the opportunity of telling a little about the mill where the paper is made. The author has not touched on the questions of fuel, water, labor,

growth of weeds which in the rainy districts is very rapid, and the great difficulty in procuring common labor. It was this labor shortage which set Mr.



First paper mill in the Hawaiian Islands.—View of the paper mill buildings of the Olaa Sugar Company.



The digesters, capacity 14,000 lbs. each.

etc., but perhaps he will tell us more about that and the problems of manufacture in another contribution.

Mr. Mason says the climate in the middle of the Pacific is ideal and he likes the place, people and the work. He sent along some samples of crushed cane raw and cooked, and, paper before and after saturating. Of quite as much interest, however, were the pictures of Hawaii and the pieces of lava from the eruption last summer.

The mill of the Olaa Sugar Company was built to meet the special needs of one company brought about by two factors of the raising of the sugar-cane—the

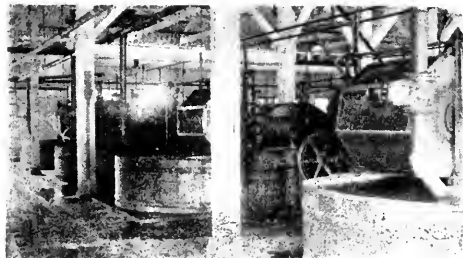
Eckart, the general manager, to thinking of ways and means of preventing the weeds from growing, and he finally resorted to the use of paper for covering the young sugar-cane. He experimented first with building paper. Although the results from this were encouraging, the paper proved to be somewhat too strong to allow the young cane-sprouts to force their way through. It was, therefore, decided to build a mill and manufacture from refuse bagasse, a paper which should exactly fill the requirements.

Arthur D. Little of Cambridge, Mass., engineered the proposition and carried out a series of experiments for the company. The mill was built and set in operation by Mr. O. D. Glass of Chicago.

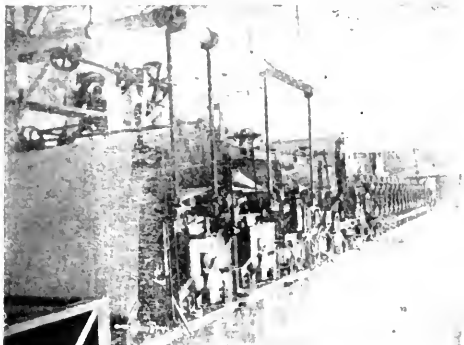
The equipment of the plant consists of two globe rotaries of seven tons capacity each, four 1,000-lb. Emerson beating engines, two Emerson Jordans and



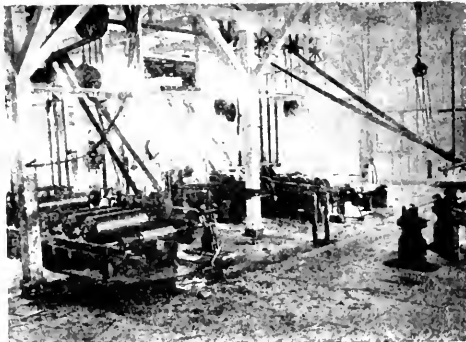
Storage bin over digesters and Pat the chief cook.—Pat is not an Irishman, as his name might suggest, but a Japanese.



The beater room, 4—1000 lbs. Emerson beaters.



The Beloit 2-mould cylinder machine, 72 inch. trim

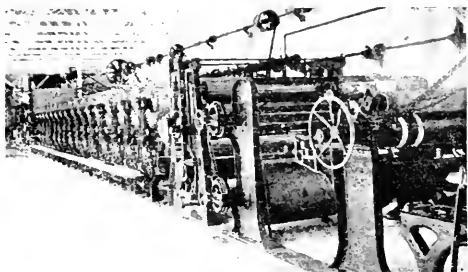


Saturating plant. Two Moore and White 48 inch machines.

one 80" two-mould cylinder machine, made by the Beloit Iron Works. The saturating plant consists of two 40" Moore and White saturating machines. It is in charge of Mr. P. J. Conley of San Francisco, who is well known in the saturating business on the Pacific coast.

perimenting we have been able to turn out a sheet that exactly meets our needs.

The bagasse is cooked for twelve hours with lime under 60 pounds steam pressure. It is then blown off and allowed to remain on the floor for three or four days before being used. The exposure to the air for



Dry part of paper machine.

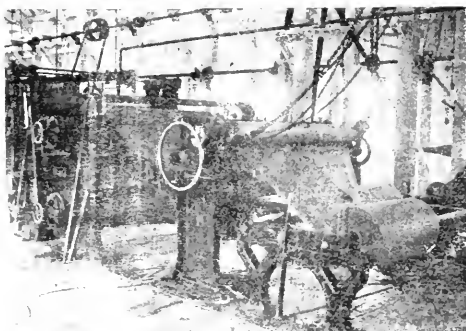


Method of transporting from mill to cane field.

The bagasse looks like poor raw material from which to make paper. Nevertheless, it makes very suitable sheet for use on the field. What is required here is a sheet with a very low bursting strength. If the bursting strength is too high, the cane is unable to force its way through and the sheet must then be split with a knife. However after considerable ex-

this length of time causes the paper to work better on the machine and to saturate more easily.

From the machine the paper is conveyed to the saturating plant where it is run through the asphalt. The jumbo rolls are allowed to stand for twenty-four hours to give a chance for the asphalt to soak in. The



Wiper end of paper machine



Laying the paper on the cane field to prevent the weeds from growing.



Young sugar cane sprouting through the paper.

paper is then run over the winder and put up in a convenient size to be handled on the field.

By doing away with the necessity for repeated weeding the use of the paper on the field reduces the cost of labor 50%, increases the yield and causes a better and stronger cane, with a higher extraction, to be obtained.

The accompanying photographs show the process from the digsters to the cane-field.

### USING LIQUID SULPHUR DIOXIDE

At the Camas mill there is being used in the making of sulphite cooking liquor an interesting chemical which is termed liquid sulphur dioxide. This material is used in place of sulphur in the acid-making system by the Crown Willamette Paper Co and its use is an interesting development for several reasons.

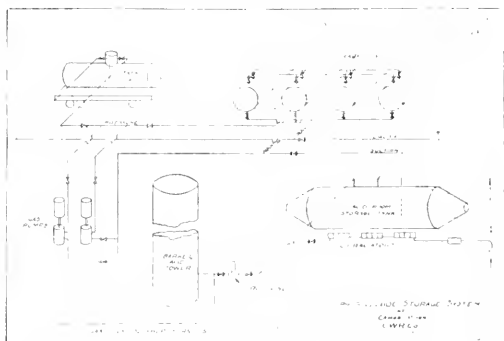
In the first place, it is a by-product material which formerly was a waste incidental to the smelting of copper ore.

In the large smelter near the city of Tacoma the smelter engineers have installed a process for recovering this valuable material from their stack gases, and it is this material that the paper mill is using to replace sulphur in its acid-making process.

Another interesting thing about this material is that it is, as its name implies, a liquid gas. In fact, the gas comes to the mill in tank cars, just as fuel oil or any other liquid might, were it received by rail. The liquid gas, however, has a property different from that of fuel oil, namely, not remaining in liquid form unless it is confined in a closed tank under pressure. Remove the pressure and the liquid turns into gas; apply pressure to it and the gas reverts again to a liquid. As a result of this peculiar property, the gas when received at the mill in the tank cars is in liquid form, but there is about 40 to 50 lbs. of pressure in the car. It is therefore an interesting problem to get the liquid out of the car into the storage tanks, at the same time maintaining sufficient pressure so as to keep the gas in a liquid form. How this is done, a study of the accompanying diagram will show. As indicated on this diagram, two pipe connections are made to the tank car when the gas is to

be unloaded. One of these connections is simply into the top of the car, and leads from the pressure side of the gas pump cylinder, as indicated in the diagram. The other connection is to a syphon pipe which extends down to within an inch or so of the bottom of the car. It is through this connection that the  $SO_2$  in liquid form leaves the car and is delivered into the storage tanks. What takes place in the unloading of this material is as follows:

The connections to the car are made, then the gas pump is started. This pump draws the sulphur dioxide gas from the top of the storage tanks and delivers it, under pressure into the top of the tank car. As a result of the decreased pressure in the top of the storage tank, resulting from this pumping, together with the increased pressure on top of the liquid gas in the tank car, this liquid gas in the car is forced by the pressure above out through the syphon gas pipe extending nearly to the bottom of the car, into the storage tanks at the mill. In this way gas is always maintained in liquid form and the unloading of the tank cars is simply accomplished.



When the gas is to be used in the acid plant, it is first run from the storage tanks to another tank located near the acid room. To effect this transfer of liquid gas the piping is so arranged that the same gas pump that is used for unloading the tank car is also used to pump gas from the top of the acid room tank to the storage tanks, in the same way that this gas is handled while the tank car is being emptied.

The tank near the acid room is buried in a pit and cast-iron radiators are installed under the tank. These are necessary, for as the pressure in the tank is reduced by drawing off gas, the liquid sulphur dioxide tends to cool and frequently a heavy frost forms on the shell of this tank. The heating coils compensate for this cooling effect and tend to keep up the pressure of the gas in the tank.

There is a pipe leading from this tank which carries the gas to the reducing valve, where the pressure is dropped from that of the tank, say about 40#, to a lower pressure, at which pressure the gas is introduced into the gas line leading to the Barker acid tower, this gas line being the one which carries the gas from the sulphur burners to the Barker tower after this gas has passed the water cooler in which it is cooled.

On account of the chemical formation of liquid sulphur dioxide, it requires 2 lbs. of this material to replace 1 lb. of sulphur.

In the Camas plant, liquid sulphur dioxide has been used in comparatively small quantities for a little over a year, and its operation is very satisfactory. Makin' Paper.

### NEWS IS \$150 IN NEW ZEALAND.

A recent visitor in Montreal was Mr. F. E. Jones, of W. H. Simms & Sons, Limited, Christchurch, New Zealand, chairman of the Importers' Committee of the Associated Chambers of Commerce, of that country. Mr. Jones is visiting Canada with a view to looking into trade conditions and of promoting commerce between Canada and New Zealand. He carries a letter of introduction from Premier Massey to Sir George E. Foster, Minister of Trade and Commerce, and another to the Montreal Board of Trade from the Chamber of Commerce of Christchurch.

"New Zealand is anxious to promote trade with Canada," said Mr. Jones, "and I am here to find out the best methods for doing it. We are particularly interested in seeing if we cannot secure a greater share of the printing paper produced in Canada, as New Zealand, like most other countries, is experiencing a shortage of that commodity just at present.

"We favor Canadian paper and admit it free of duty, while imposing a 20 per cent ad valorem import duty upon paper coming from outside the Empire, but we cannot understand why we should have to pay a higher price for it than that paid by Canadian consumers, ordinary printing paper selling here at a price of \$69 a ton costs in New Zealand the equivalent of \$150 a ton which, of course, includes the cost of transportation. We cannot understand why there should be this discrimination in price and that is one of the things I have come to look into.

"Publishers of newspapers in New Zealand have become very much interested in the question and have made representations to our Government in regard to it. They believe that if the discrimination continues, the preference given to Canadian paper in New Zealand should be removed and the market there opened to all comers on an equal basis. If that is done there is a good chance of Canada losing our market as Norway and Sweden, relieved of the duty, could lay down paper in New Zealand cheaper than Canada can do it, and if they once secure the trade they can be depended upon to hold on to it. In the present state of things Canada may not attach much value to this trade, but in a year or two conditions will probably change and Canada will be looking for new markets."

Canadian paper men with whom Mr. Jones talked, explained that the fixed price in Canada was a compulsory one and did not necessarily reflect the actual value of the product, but the visitor took the view that if paper is sold in Canada at less than a fair price, whether under compulsion of law, such price must have the effect upon export customers who probably have to pay a higher price on account of it. He thought that was hardly in keeping with the spirit that ought to prevail between fellow members of the British Empire.

Mr. Jones says that shipping conditions between Canada and New Zealand have materially improved in the last three months, and now offer practically no obstacles to trade between the two countries. He says that New Zealand has its share of labor troubles, although they are not as acute as they appear to be in this continent. He also says that the cost of living does not present quite so formidable a problem over here as here.

"We can still buy eggs at a shilling a dozen and butter, cheese, meat and other things in proportion," he said, adding that financially New Zealand is in a highly flourishing condition, having disposed of great

stores of foodstuffs, wool, etc., to Great Britain, for cash and at a good price. The country is now in the throes of a general election campaign, which culminates in two weeks' time.

### CAR LOADING A REAL ART.

The finishing rooms in the Mills of the Abitibi Power and Paper Company have developed the art of car loading until it has become a science. So exacting and extensive are the precautions taken against damage to the huge rolls of paper while in transit, that little short of an actual railroad wreck can harm the newsprint while on its way to its destination.

The procedure is explained thus by The Broke Hustler:

The empty freight car is first placed on a siding by the railroad company, where an inspector goes carefully over it to see that it is thoroughly watertight. Bad cars are rejected at once, and any that the Inspector is in the least doubtful about are subjected to a water test. If this test is passed satisfactorily the car is then switched to the Train Shed in the Mill where an experienced cleaner cleans it out thoroughly and goes carefully over it with a smoothing board for nails and bolt heads. The cleaner extracts all nails and other obstructions that he finds, and turns it over to a second inspector.

This man is equipped with a cluster of powerful electric lights which illumine every corner of the car with a strong light. He goes over every part of the car with extreme care, marking all projections such as nails that have been overlooked, or bolts heads, with a piece of chalk. The car then is put in charge of the car liners who extract all nails, and cover any projection that cannot be removed with thick strips of wrapper. The ends of the car are then furnished with bumper blocks, each consisting of two six inch strips of eight thicknesses of wrapper. This is an efficacious protection from jolts or jars of any kind. The sharp corners of the door posts are also covered with six inch strips of eight thicknesses of wrapper, and the car is again gone over under the glare of strong electric lights and tested with a straight edge to see that smooth surfaces are everywhere presented to the rolls.

The rolls are then loaded and pushed tightly together with an instrument known as a "roll pusher," those in the doorways being toe-blocked with triangular shaped blocks of wood nine inches long and four inches high. A two inch plank, six inches wide, is nailed across the inside of the doorway to prevent the roll from falling against the door, and finally the door is closed, and strips of tar paper are nailed along its top and both its sides and are battened down with strips of half inch wood one inch wide.

### FORESTRY ENGINEERS MEET IN JANUARY.

A meeting of Forestry engineers will be held at the Parliament Buildings in Quebec early in January when over fifty engineers will attend. The convention will probably last three days when many interesting matters dealing with forestry in general will be dealt with. The Association of Forestry Engineers will also choose its officers for the coming year. Hon. Mr. Mercier will probably attend the convention.

Abitibi stock at 203. Laurentide at 270. What next?

We are glad the miners are back at work—20 below zero in St. Anne's Wednesday.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**B-9. The West asks for its forests.** Robson Black, *Can. For. J.*, Dec. 1918, p. 1967. A brief discussion of the agitation in favor of turning over the natural resources of the Western provinces, with particular reference to the forests, to the respective provincial governments. Shows that the forests of the prairie provinces are greatly depleted by fire, that the forest revenues are very small as compared with the cost of their protection and administration, and concludes that the transfer by the Dominion Government of the forests in these provinces, to the respective provincial governments, would presumably not be in the interest of efficient fire protection.—C.L.

**B-9. New Brunswick to the fore! and why?** G. H. Prince, *Provincial Forester*, *Can. For. J.*, Dec., 1918, p. 1982. Discusses the progressive policy now in effect in that province. Increased efficiency is noted, particularly in connection with forest protection and forest research. Political patronage has been eliminated from the fire ranging service.—C.L.

**B-9. Manitoba 75 per cent under forest.** *Can. For. J.*, Jan., 1919, p. 13.—C.L.

**B-9. Reconstruction! and the call of the forests!** Ellwood Wilson, *Can. For. J.*, Jan., 1919, p. 15.—C.L.

**B-9. The problem of Ontario's pine supply.** W. F. V. Atkinson, *Can. For. J.*, Jan., 1919, p. 18.—C.L.

**B-9. Coupling the forest to the fruit farm.** Geo. P. Melrose, *Can. For. J.*, Jan., 1919, p. 8. Describes how British Columbia's richest valleys depend upon natural water storage of wooded mountains.—C.L.

**B-9. Reconstruction is a conservation question.** Gifford Pinchot, *Can. For. J.*, Jan., 1919, p. 3. "In many ways the forest is the fundamental natural resource, for it not only supplies a basic raw material of modern civilization, but makes it possible for us to get and use the other raw materials which it does not itself supply. Reconstruction can not be successfully handled by neglecting the forests."—C.L.

**B-9. Floods and erosion, cause and cure.** S. T. Dana, U. S. Forest Service, *Can. For. J.*, April, 1919, p. 159.—C.L.

**B-9. The significance of our eastern forests.** Dr. B. E. Fernow, *Can. For. J.*, April, 1919, p. 178. Explodes the fallacy of inexhaustible forest resources in Canada; discusses the rapid growth of the pulp and paper industry in Eastern Canada.—C.L.

**B-9. Canada's woodpile as an industrial magnet.** *Can. For. J.*, April, 1919, p. 180. Answers the arguments by certain United States paper manufacturers who desire to secure the modification or abolition of the embargo on the export of Crown lands pulpwood, particularly in the Province of Quebec. Shows that Canada now exports more than one million cords of pulpwood per year, presumably cut from settlers' lots and freehold lands neither of which are subject to the embargo conditions. Advocates the retention of the existing embargoes.—C.L.

**B-9. World demand shortens life of our forests.** F. J. Campbell, President Canadian Pulp & Paper Assn., *Can. For. J.*, Feb., 1919, p. 79. Discusses the forest resources of Quebec and their relation to the ever-increasing demand for pulpwood.—C.L.

**B-9. The State's duty in managing forests.** Hon. E. A. Smith, Minister of Lands and Mines, *New Brunswick*, *Can. For. J.*, Feb., 1919, p. 66. Discusses New Brunswick's progressive forest policy.—C.L.

**B-9. An Imperial forest policy.** Sir John Stirling Maxwell, *Can. For. J.*, Jan., 1919, p. 56. Advocates giving Canadian woods an equal chance in the British market by levying import tax on timber from Russia and Scandinavia.—C.L.

**B-9. Nova Scotia getting ready.** Robson Black, *Can. For. J.*, Dec. 1918, p. 1986. Reports the forestry conference held at Halifax Dec. 10, at which was discussed the proposed appointment of a Provincial Forester.—C.L.

**B-9. A national forest policy.** Wilson Compton, secretary-manager, National Lumber Manufacturers' Association, *Amer. For.*, Sept., 1919, p. 1337. Discusses from the viewpoint of the lumberman and political economist, the national forestry program advocated by Col. H. S. Graves, Chief Forester, U. S. Forest Service. Possession of cheap and plentiful timber is not necessarily a symptom of national wealth. Removal of original forests from the soil of the United States without provision for forest renewal on most of the land thus cleared is not necessarily a national misfortune. The extent to which non-agricultural land should be devoted to forestry is primarily dependent upon the extent of the demand for forest products. The growing of timber crops is the proper business of the Government rather than of the lumberman. The private owner of timberlands is under no greater obligation to use his land permanently to grow timber than the owner of agricultural land is to use the land to grow crops, if the growing of crops is unprofitable. See also discussion on pages 1339 to 1342 of same issue.—C.L.

**B-9. Mexico as a source of timber.** Austin F. MacDonald, *Amer. For.*, Sept., 1919, p. 1361.—C.L.

**B-9. Returned soldiers in forestry courses.** *Can. For. J.*, April, 1919, p. 147. Describes the five months course in forestry for returned Canadian soldiers at the University of British Columbia, maintained by the Department of Soldiers Civil Re-establishment. 21 men were enrolled in this course last winter.—C.L.

### ADHESIVE FROM WASTE LIQUOR.

An interesting picture in a recent number of the *Digester* shows a few of the members of the Laurentide Paper mill staff trying to pull off a head that was struck on a roll with the new adhesive prepared by their research department. This new material, which is obtained by the evaporation of waste sulphite liquor at a very low cost, will be produced shortly in quantities sufficient to replace the glue and paste used in the finishing department and the mixture used in the core department. An appreciable saving will be effected by this new process.

Consolez-vous! Si quelqu'un a pris votre chevre, il aura la peine de la nourrir cet hiver, which, by interpretation, "Cheer up! If the other fellow gets your goat, he will have to feed it this winter."



# UNITED STATES NOTES

Although at the last session of Congress no appropriation was made for the continuation of tests on plant paper fibre made for the Government by J. S. Merrill, until recently in charge of the paper laboratory of the Bureau of Plant Industry, Department of Agriculture, this important work will be carried on by Crane & Co., of Dalton, Mass., with which concern Mr. Merrill is now associated. Crane & Co. were so much interested in the development of the process that they offered to finance a continuation of the work under Mr. Merrill's direction when it became manifest that it had to be abandoned by the governmental bureau because the necessary funds had not been provided.

The National Paper Can Corporation, Rochester, N. Y., is listed among recent incorporations. The new concern will manufacture and trade in all appliances for containers or holders of foodstuffs, chemicals and merchandise, etc. The capitalization is stated to be 1,000 shares preferred stock, par value \$100 each, and 800 shares common stock of no par value.

Representative Anthony of Kansas, himself a newspaper publisher, is about to introduce in Congress a bill which it is designed to accomplish an immediate reduction in size of newspapers, magazines and other publications through an order of Congress to the Post Office, Department to refuse to accept as mail voluminous publications. The limitations proposed in Mr. Anthony's measure would be kept in force until July, 1921. Many papers, particularly those in the smaller cities, will soon be forced out of business unless a general reduction order is enforced, said Mr. Anthony in discussing the newsprint shortage last week. "The paper situation," he said, "has been made acute through a greatly increased demand, due to an unexpected volume of advertising, and at the same time a decrease in production. The trouble apparently is that no one newspaper or group of newspapers or publications is willing to take real steps to conserve paper, fearing its action will drive advertising to its competitors. In that case it is the duty of the Government to step in. Many papers in smaller cities have wired me they are unable to make contracts at any price for next year. The paper simply cannot be had, and the price has jumped from about 2 cents a pound before the war up to 10 and even 15 cents now. I have not compiled definite figures, but in general I believe my bill will cut down the paper used in week day papers one-third, reduce the Sunday consumption one-half, and decrease the paper used by magazines 25 to 30 per cent."

A notice of dissolution was recently filed with the Secretary of State, New York, by the Cascade Wood Products Company of St. Regis Falls, N. Y.

In urging the Senate to act on pending legislation to permit hydro-electric development in navigable streams, Senator Jones of Washington pictured how a coal crisis such as the country now faces would be alleviated under proper water power development. The ultimate development of all the power available in navigable streams, the Senator pointed out, would be equal to 70,000,000 tons of coal. The bill calling for such development is now in the Senate, having already been passed by the House. Its immediate enactment

is advocated by Governors of several States and by the Mayors of a number of cities throughout the country. Telegrams promising support of the measure have been sent by the executives of New Hampshire, Rhode Island, Indiana, Michigan, North Dakota and Colorado to Mayor Cornelius F. Burns of Troy, Chairman of the executive board of the New York State Conference of Mayors who sent out a message directing attention to the need for utilizing water power as a practical means of aiding fuel conservation. "The serious coal situation confronting the nation has brought to our attention most forcibly the need of conserving our fuel supply," wrote Mayor Burns. "It is nothing short of criminal to have the surplus waters of the country running to waste when their utilization would mean a tremendous supply of electrical energy the absence of which at the present time is placing in jeopardy our industrial life."

Operations have been resumed at the international Paper Company's Niagara Falls mill, where writing paper will be manufactured. Considerable attention is being given in brokerage circles to the speculative possibilities of International Paper common. This stock sold up to 82 early in November. Earnings this year for the common will probably equal \$25 a share, which means that in the four years ending with the current one the company will have earned a total of \$102 on its stock without having disbursed a cent on dividends. International paper is unable adequately to supply the American orders with newsprint, to say nothing of foreign orders which the company might accept if it wished even greater profits. Contracts covering the first quarter of 1920 are being closed at \$90 a ton, compared with a price of \$75.05 under Government control.

## KELLOGG IN TIMBERLAND EXCHANGE.

William L. Hall having completed twenty years of work in forestry with the Federal Government announces his retirement as Assistant Forester in the Forest Service, U. S. Department of Agriculture, effective November 24, 1919, and his association with R. S. Kellogg and others in the organization of Hall, Kellogg & Company, 1449 Otis Building, Chicago.

This is an organization having for its principal purpose the conducting of land exchanges between timberland owners and the Federal Government on the National Forests and elsewhere.

The work will contribute to the further development of the Nation's forest policy by active aid in the consolidation of Federal, State and private timberland holdings for better administration and operation.

## BUYS BATHURST POWER PLANT

Mr. John P. Leger, who has been supplying electricity and power to Bathurst for fifteen years under the name of the Bathurst Electric and Water Power Co., Ltd., disposed of his interest in that concern on Wednesday. Messrs. P. J. Veniot and Angus McLean closed the deal for the purchasers, who we understand are a syndicate of well known provincial capitalists shortly to be incorporated for the purpose of greatly developing the power possibilities of the Tetegouche River.—Gloucester Northern Light.



# PULP AND PAPER NEWS

The death took place in Toronto on Sunday last of Robert C. Winlow, father of George Winlow, of the sales department of the Canada Paper Company. Deceased, who was in advanced years, was injured some days ago by being struck by a street car on Wellington Street. He was a well-known and highly respected citizen of Toronto.

P. B. Wilson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, has just returned to Canada after three months sojourn in England. The trip was one in which Mr. Wilson combined business and pleasure for his old home is in the Isles and naturally Mr. Wilson spent some time around his old haunts.

John Thompson, a pioneer printer of St. Thomas, Ont. and for several years a member of the reportorial staff of the St. Thomas Journal, died after a long illness. The late Mr. Thompson was one of the first reporters in St. Thomas and was associated with the Journal when it was in the weekly class.

C. F. Crandall, of the Montreal Star, has been appointed honorary secretary of the executive committee of the Canadian Press Association in charge of the Imperial Press Conference to be held in Canada next Summer. The conference will be attended by the leading publishers of the whole empire and they will be taken from ocean to ocean in special trains as guests of the Canadian publishers. It is estimated that the newspapers represented by the visitors aggregate over one million readers.

It is announced that John W. Tibbs, News Editor, has been appointed News Manager of the Canadian Press Association and that his functions have been extended. Editors and correspondents of the Maritime, Ontario and Quebec Districts will be responsible to him for the news of their various districts. W. P. Robinson, who was the chief operator, has been promoted to be Night Editor at the head office. F. A. MacDougall has been made chief operator. V. M. Kipp, British Columbia News Superintendent, has been appointed Acting Assistant General Manager for the West.

A deputation from Fort William is expected to wait on the Ontario Government in Toronto this week to ask that under a lease for pulpwood rights on the Pic River granted the Great Lake Paper and Pulp Company influence should be brought to bear to have the mill located within either of the Twin Cities. At present it is said to be in the intention to locate the plant outside Port Arthur. On Tuesday a deputation waited on the Hydro-Electric Power Commission hoping that some influence could be exerted there owing to the fact that a contract for power must be entered into with that body. It was found, however that the matter was entirely one for the Cabinet.

The fourth out-of-town luncheon of the Toronto Carton Club was held on December 9th at the Kerby House in Brantford. All of the Hamilton Members were in attendance together with a good representation of the clubs at Toronto, Brantford, Guelph, Kitchener and Galt. Those present were driven in the morning to the factory of the Canada Glue Company where an interesting time was spent in seeing the different processes in connection with the manufacture of glue. The luncheon took place at one o'clock and afterwards a pleasant and profitable time was spent in discussing matters of general interest to the paper box business.

The Provincial Paper Mills, head office Toronto, whose stock is listed on the stock exchange, has increased the dividend on its \$2,481,300 common stock from 4 to 6 per cent, the first dividend at the new rate being announced on December 8th. The 4 per cent rate has been in force for several years.

George E. Scroggie has been elected a director of the Toronto Mail and Empire, while W. J. Darby has been appointed treasurer and George M. McTaggart circulation manager.

The Diamond State Fibre Company of Canada, Ltd., are starting a warehouse and factory at 455 King St., West, Toronto, where they will carry a complete stock of fibre sheets, rods and tubes and manufacture special shapes to suit any specifications, such as bushings, washers, gears, discs, etc. The sheet fibre stock will consist of trunk fibre, insulating fibre and mechanical fibre in any specifications desired. The firm will also carry the Diamond State Fibre Company's receptacle line, consisting of waste baskets, warehouse cans etc. The protective paper stock will consist of glassine, grease proof, vegetable parchment, parhoid and filter paper.

Ramsey and Ogle is the name of a new firm to enter the paper trade in Toronto. They have opened a jobbing business at 76 Pearl Street and will specialize in job lots of all classes of paper. W. B. Ramsey of Ritchie and Ramsey is one of the partners.

The two weekly papers in Tillsonburg, Ont., The Liberal and The Observer, have been amalgamated and a joint stock company has been formed which will take over both offices and begin the publication of the Tillsonburg News on December 26th. The new company is known as the News Printing Company of Tillsonburg, Limited. F. E. Aldrich is President; John Law, Secretary and H. P. Johnston, Business Manager. The publication office will be in the premises now occupied by the Observer, a paper that was established by William Law in June 1863.

A circular just issued from the office of Lord Atholstan, of Montreal, Chairman of the General and Executive Committees for the Imperial Press Associa-

tion, urging that no effort be spared in the attempt to make the visitors welcome and their stay a pleasant one. He bears the signatures of many of Canada's prominent men. Sir Robert Borden heads the list which includes all the Cabinet Ministers, Hon. W. L. Mackenzie King, Leader of the Opposition, Hon. W. S. Fielding and others. Arrangements are under way for the elaborate entertainment the visiting journalists will have beyond the seas.

The Canadian Barking Drum Company, Limited, whose Toronto office is in the Royal Bank Building as assignee of Herbert Guettler, have secured Patent No. 191,245 on "L" Bars in Canada, which are being substituted for the old type of angle irons, in connection with the peeling of pulp timber, and which are said to be giving satisfactory results.

Senator Ross of the Fort Frances Pulp and Paper Company has taken out a writ against the Paper Controller, R. A. Pringle, K. C., the Minister of Justice and the Manitoba Free Press, which is of a most important nature, not only to the Fort Frances Company but to the Dominion at large. The writ, which has been issued by Messrs. Pringle and Guthrie, will raise the question as to whether or not the Dominion War Measures Act is now in force. There have been different views expressed upon this question and as to who is right seems about to be determined by the courts.

By the purchase of the Macleod Pulp Mills at Milton, Nova Scotia, by Frank J. D. Barnjum of Annapolis Royal, N.S., one of the largest holdings of fee land pulpwood in Canada, 350,000 acres and which is being continually added to, will now be manufactured into pulp and paper in this country instead of being shipped as raw material to the United States.

Mr. W. W. Hughes, who has been secretary of the Central Branch of the Canadian Manufacturers' Association for the past three years, has resigned in order to enter into business on his own account, as an importer and exporter, with considerable capital backing his work. Mr. Hughes will be succeeded by Mr. W. W. Gould, who has been engaged in newspaper work in Montreal for the past few years, and in other journalistic capacities in England and Canada for a number of years.

#### FATALITY AT BATHURST PULP MILL

Mr. Philip Chassi, an employe of the Bathurst Lumber Co. at the pulp mill, was instantly killed November 30 while assisting to move a heavy disc in the wood room. This disc slipped as it was being placed in position and fell upon the unfortunate man, crushing his life out instantly.

Dr. R. G. Dimean was immediately notified and after hearing the witnesses' account of the accident, decided that an inquest was not necessary. The deceased had been employed at the pulp mill for about a year, coming here from St. Anaclet, Que. His remains were taken to his former home on Monday, accompanied by Mr. Pat. Cormier of East Bathurst, and by his wife and one child who comprise his surviving family.

#### HOWARD SMITH PAPER MILLS, LTD., GETS NEW CHARTER.

Shareholders of the Howard Smith Paper Mills, Limited, at a special general meeting held this week, confirmed the sale of the enterprise as a going concern to a new company recently incorporated under the same name, with an authorized capital of \$7,000,000. About 90 per cent of the issued capital stock was represented at the meeting and the proposal recommended by the board of directors was adopted without a dissenting vote.

Under the conditions of the sale, one share of 8 per cent cumulative preferred stock of the new company, participating up to 10 per cent, will be given for each share of the 7 per cent non-participating preferred stock of the old company, while holders of the old common stock will receive two shares of new for each one presently held by them.

The new company undertakes to pay the common shareholders of the old company the dividend of 5 per cent recently declared for the year 1919. No change in the management of executive is involved in the transaction.

The reorganization enterprise will operate three divisional plants for the manufacture of bond, ledger and other high-grade papers, these being situated at Beauharnois and Crabtree Mills, in Quebec, and Cornwall, Ontario, the latter being the property of the Toronto Paper Manufacturing Company recently acquired by the Howard Smith enterprise.

The Howard Smith Paper Mills, Limited, has made steady progress since its formation in 1912, and all three of its divisional plants, it is stated, are running at full capacity with orders for several months booked ahead. The capacity of all the plants is now being substantially increased by the installation of additional paper machines and other equipment to meet the increasing business. The amalgamation under one management of the company and its resources makes the Howard Smith Paper Mills, Limited, by far the largest producer of high-grade papers in Canada and one of the largest in the world.

#### BATHURST ON THREE TOURS

A radical change in the hours of labor of their workmen at the pulp mill and also in the rates in pay in effect was put into force December 1 by the management of the Bathurst Lumber Co.

Instead of operating the plant by two shifts of eleven and thirteen hours each day, the modern system of three shifts of eight hours each has been adopted, while the rates of wages for the new periods have been made the same as was formerly paid for ten hours, plus an advance of 10 per cent, or the equivalent of eleven hours previous pay.

This means a substantial reduction in the hours of labor of the workmen with a very slight reduction in wages, and works out so far to the great advantage of the men. A very pleasant feature of the new arrangement is that it was made voluntarily by the company without any pressure or hint of pressure or complaint of any kind from the employes. It means an additional expense to the company for wages of about 30 per cent and the employment of a considerably larger force, but there is every reason to believe that the change will be beneficial from the company's viewpoint as well as from that of the men.



### CANADIAN TRADE CONDITIONS.

Toronto, December 13, 1919.—Barring advances in prices in a few lines of paper and the soaring prices of newsprint there is no change in the situation as far as the pulp, fibre and paper trade is concerned. Prosperity still attends the manufacturers and in but very few lines is there any possibility of meeting the demands that are being made. Business in all branches of the paper trade is exceedingly brisk, production continues to fall far short of the demand and every industry is working at full capacity in an endeavor to catch up with orders, which, in some cases are months behind. Some indication of the manner in which newsprint and pulp prices are mounting was seen this week, when a Toronto jobber was quoted a rate of \$74.25 for a shipment of four carloads of groundwood pulp which is considered a somewhat remarkable price when sulphite is obtainable at \$90.00. But it bears out the statement previously made in these columns that the pulp mills and particularly the news print mills, can get almost anything that is asked for their products. Sales of groundwood pulp as high as \$50 are known to have been made although the ruling price is \$45 at the mill. The Toronto jobber who received the quotation of \$74.25 on a four carload lot declared that it was a bona fide offer and that there was no possibility of a mistake on the part of the typist.

There is a big demand for pulp. Those engaged in selling the raw material in the way of timber say that the supply is limited. Owing to the fact that labor has been hard to get and that it has been high this year, the cutting of timber for pulp in most districts has not been so extensively gone into. Because of this shortage of production two of the mills at Thorold are said to have been rather severely up against it and had great difficulty in securing enough wood to grind. Conditions such as these shed some light on the shortage and high price of news print.

The tissue mills are all doing a big business and the demand for all lines keeps up. Prices of several grades of light weight tissues have advanced five per cent and colored sulphite wrapping paper have gone up half a cent a pound. Paper towels have also undergone a slight increase in price.

The paper box factories have never experienced so busy a time and with the production far behind the demand and with most of the mills piled up with orders that they have not been able to fill, trade in this branch of the paper industry continues to boom. Prices remain firm and the demand somewhat uncomfortably great from a manufacturing standpoint, the makers declaring that they are turning out all the goods that labor and their equipment and raw material will allow of. Mills at Montreal, Frankford and other centres report that they are swamped with orders. The same conditions are found in the tag and cover stock branches of the trade, the demand there being far greater than the mills can supply.

Owing to the fact that production has not kept pace with the demand and that the mills are turning out very little more than before the war, there is a general scarcity of book papers, particularly coated stock, and jobbers have had orders on hand for months that they have been unable to fill. In book papers all the better stocks and colored papers are advancing in price, most of the colored lines undergoing a cent and a half a pound increase on December 1, while most of the white bonds remain unchanged. Shortage of coloring material is ascribed as the reason for the advance in price of the colored bond. The quality of the dyes being used is the subject of some complaint although it is recognized that the best available are being employed and despite the hate of every thing German engendered by the war, many paper-makers would welcome the chance to get hold of the better class dyes which apparently only Germany can produce. Book papers, aside from the coated stock, remain unchanged in price with a big demand and the mills unable to keep up with the calls for goods. About the only class of paper stock that is coming through freely, and which answers to the demand for it, is the Bristol. Most of these boards are imported from the States and the mills that were closed during the war are now running, with the result that stocks are quite easy to procure and orders are promptly delivered despite the fact that there is a big demand for them.

There is a big demand just now for cheap writing Manila which is almost impossible to get. The Canada Paper Company are about the only people making

## Scandinavian American Trading Co.

50 E. 42nd STREET

TELEPHONES 8311  
8312 MURRAY HILL,  
8313

NEW YORK

Write us when  
you have any  
surplus of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

this line and there are many calls for it. One Toronto jobbing firm have had orders on their books for six months for this line of stock and they have been unable to secure it for their customers.

#### Pulp Prices.

	F.O.B. Mill
Groundwood pulp	\$42.00 to \$45.00
Sulphite, news grade	\$75.00 to \$80.00
Sulphite, easy bleaching	\$92.00 to \$95.00
Sulphite, bleached	\$115.00 to \$120.00
Sulphate	\$87.50

#### NEW YORK MARKETS.

New York, December, 13.—Firmness continues to characterize the paper market in all its branches and there is no let up in the amount of business being transacted. Jobbers report consumers to be buying in a consistent manner and in large volume, while manufacturers as a unit tell of having all the orders that they can comfortably accommodate for the present and for several months hence.

The news of the settlement of the strike of soft coal miners was received with joy by the paper trade. The shortage of coal as affecting the paper manufacturing industry was rapidly reaching a stage of acuteness; in fact, quite a number of mills situated in different parts of the country have been obliged, because of the lack of fuel, to close down for short intervals within the past fortnight. With mining resumed, it is to be hoped that shipments of coal will soon be forthcoming at a more or less normal rate and that paper manufacturers will accordingly be occasioned no more difficulty because of a dearth of fuel to run their plants.

The tightness of the newsprint market becomes more impressive every day. The situation is now attracting the attention of Congressional leaders in Washington, who, as is usually the case, are seeking some means to relieve the newspaper publishers of the country from conditions for which the publishers themselves are principally to blame. A bill was introduced in the Senate on Friday by Senator Jones of New Mexico which would restrict the use of newsprint by making the postal rates on newspapers of more than 24 pages five times the present rate. The purpose of the Bill, Senator Jones stated, is to keep the big city newspapers from "gobbling" newsprint, thereby making it almost impossible for small town and country papers to get paper.

Predictions that some of the small town newspapers would be compelled to cease publishing as a result of the paper shortage have become a reality. A daily paper in a town in Pennsylvania suspended this week, announcing that it was unable to obtain supplies of newsprint. That other papers will likely be affected is generally admitted. The newsprint market continues exceedingly firm. Offerings are very light and buyers are meeting any price within the bounds of reason to get supplies. Metropolitan newspaper publishers are restricting their consumption to a rigid degree. Hardly a paper in New York fails to leave out a good proportion of the advertising offered it every day. As an example of the heavy volume of advertising newspapers are carrying may be cited the case of one local afternoon daily, which one day this week printed 32 pages of 8 columns, or 256 columns all told, of which total 246 columns were advertising, leaving a bare 10 columns for reading matter.

The book paper market is strong and active. Mills are running at full capacity and are sold up for a considerable period, contract customers having acquired

practically the entire output. Tissues are firm and in steady demand. Wrappings and other coarse papers are moving in a consistent way and at maintained prices. Fine papers meet with a voluminous demand and rule very firm in price.

The board market has strengthened. About the lowest price named on plain chip board by mills at present is \$62.50 a ton and most manufacturers are refusing to accept orders at less than 65. Virtually every mill is confining its orders to those coming from regular customers.

GROUND WOOD.—Firmness characterizes quotations on groundwood and while demand is not as pointed as it has been recently, there is no supply going abegging in the market. Rather, buyers are still encountering considerable difficulty in covering their wants, producers in the great majority of cases having their output contracted for and therefore being unable to accept additional orders. The latest figures issued by the Federal Trade Commission show that during the month of October domestic mills consumed and shipped 8,653 tons of groundwood in excess of what they produced. Prices range from \$50 a ton upward, with even stored pulp held at \$45, and higher.

CHEMICAL PULP.—Chemical wood pulps are in a steady market position, quotations ruling strong and demand being of a consistent nature. There is not the excitement among buyers to secure supplies as was in evidence a short time ago but available pulp is quickly absorbed and the market seems virtually bare of important accumulations. Leading producers of bleached sulphite of standard quality report securing 6 cents at the mill without trouble for all the pulp they have to offer, while unbleached of newsprint quality is selling steadily at 3.50 to 3.75 cents per pound and domestic easy bleaching at 4.50 to 4.75 cents. Kraft pulps are moving in less volume than sulphite yet there is sufficient business activity in this end of the market to firmly sustain values and No. 1 domestic kraft is readily bringing 3.75 to 4 cents. Nothing of importance is reported from foreign pulp centers excepting that the market in Scandinavian countries remains very firm.

RAGS.—Papermaking rags of nearly all descriptions are in good demand and prices evince a strong upward tendency. Consumers are placing orders for all classes of material in steady fashion and show little reluctance about meeting the prices asked on such stock as they desire. Roofing rags especially are strong. Felt manufacturers, judging from their efforts to obtain supplies, are consuming large tonnages of rags and are leaving no stone unturned to cover requirements as far ahead as possible. No. 1 roofing rags are selling at beyond 3 cents a pound in the East, while sales have been reported in the West at close to 3.50 cents. White rags of various descriptions are in active call. No. 1 white shirt cuttings are moving freely at 15.50 to 16 cents a pound at shipping points, while old No. 1 whites are fetching 9 cents and higher from mills. Thirds and blues are quotably higher, sales of repacked blues having been recorded at 4.50 to 5 cents a pound f.o.b. New York. Paekers are holding unsold stocks of rags with a tenacity which indicates that they anticipate further sharp advances in prices or else that they are experiencing difficulty in replacing the material disposed of.

PAPER STOCK.—Board manufacturers have continued to buy low grades of old paper in rather restricted fashion this week owing presumably to the coal situation, and this has promoted a somewhat

# WOOD PULP TRADING CO., Ltd.

Rio de Janerio, Brazil.      501 Fifth Avenue, Astor Trust Building      Buenos Aires, Argentine.  
Cor. of 42nd Street  
NEW YORK CITY

Quotations on Sulphite and Kraft Pulp Solicited.

easier undertone to prices of those classes of stock consumed by them, otherwise, the market is strong and comparatively active. Shavings, flat stock, kraft, manilas and, in fact, all the better qualities, are in good demand and quotations on them are firm. Shavings meet with a ready sale at steady prices, mills paying in the neighborhood of 5.50 cents for No. 1 hard whites, 4.75 cents for No. 2 hard whites and 4.50 cents for No. 1 soft white shavings. Heavy books and magazines are moving actively at a price basis of around 2.50 cents at shipping points and there have been instances where consumers having granted higher prices. Kraft paper is freely sought at 3.50 cents per pound, while No. 1 Manila paper is quoted at 1.60 to 1.75 cents. Two exceedingly strong items in the trade at present are No. 1 overissue news and white news cuttings. The latter, which consist of newsprint shavings or cuttings, are commanding a price above what standard newsprint in rolls sold at before the war. Consuming mills bid 2.50 cents a pound and are not getting all the supply wanted. Overissue newspapers are quotable at around 1.50 cents per pound at shipping points.

**OLD ROPE AND BAGGING.** Old Manila rope is a bit higher in price, an advance in quotations having been promoted by increased demand from consuming quarters. Sales at 6.25 to 6.37½ cents a pound for New York have been recorded, and, evidently looking for a further rise, dealers are looking orders cautiously. Old bagging rules comparatively quiet. Buyers do not show the interest in this commodity that they do in other kinds of papermaking material and offerings by dealers of No. 1 scrap bagging at 3 cents at the point of shipment frequently are going unaccepted.

### PULPWOOD AND PAPER

Such work as the following editorial in the Quebec Telegraph is one of the most potent factors in promoting a national realization of the importance of the forest to the people of Canada. The newspapers have a fine opportunity to do a grand service by pointing out the need of conserving and cherishing our national resources and demanding a proper development and utilization of them. Ed

It has recently been pointed out by Mr. W. L. Edmonds, writing in the Toronto Globe, that paper manufacturers, publishers and politicians in the United States are becoming much perturbed over the pulpwood situation. For some time past they have been growing more and more anxious in regard to the outlook. And this anxiety has been materially increased by a report of the Congressional Forestry Committee to the effect that after a superficial survey, it has been discovered that there is such a scarcity of wood pulp in the country, which in turn has affected the supply of paper, that some of the smaller newspapers may be forced to suspend publication. As a result of this discovery the Forestry Committee has decided upon a more thorough and extended investigation. From this and other facts it is perfectly clear that the United States is destined to become more and more dependent upon Canada for its supply of both pulp and paper.

The fact that American capital has become interested to a very large extent in the pulp and paper industry of the Dominion has been pointed to as an evidence that those engaged in paper manufacturing across the border have been manufacturing across the border have been fortifying themselves against such an eventuality as a shortage of the United States sup-

ply of raw material. It is exceedingly difficult to place a limit upon what the future demands of the American paper men may be upon our pulpwood or its manufactured products. That it will necessarily be very great is shown by the extent to which the export trade has increased during the last few years. In 1914, the export trade in paper, pulp and pulpwood was valued at \$22,120,943, while in 1919 it has reached the astounding figure of \$82,092,776, or an increase of over 271 per cent. In printing paper the increased value was \$26,212,819, or 267 per cent, in wood pulp, \$25,761,184 or 324 per cent, and in pulpwood, \$7,997,830 or 108 per cent. Almost everybody is aware of the enormous expansion which the business has taken in Canada. In 1900 the value of the entire output of Canadian pulp mills was but \$8,627,647. The census for 1917 gives the total for that year as \$96,340,321.

That this expansion is still on the increase is shown by the number of new mills in course of erection and the extent of the additions being made to existing industries. Such an enormous employment of the raw material cannot but lead to enquire as to the possibility of its eventual exhaustion. In this connection, however, there is a distinction to be made between the forests and the mines. While minerals do not reproduce themselves, forests, under favorable conditions, do. Moreover, some of the foremost authorities on the subject in the Dominion claim that with natural reproduction, artificial planting and proper conservation they can be maintained for all time. It is known that the Department of Lands and Forests is actively encouraging the work of reforestation and setting out millions of young nursery trees every year. The Laurentides and other large pulp concerns are going largely into the same admirably constructive conservation work. The greatest danger of all to the existing and future supply of pulpwood is from fire, which in the past has worked more destruction to the forests than the axe of the lumberman. Here, too, the local government, the lumbermen and the pulp manufacturers are fortunately working together with great system and a thoroughness that promises good results. This is as it should be, for never before in the history of the country was there greater need for employing the most efficient methods of conserving the raw material of which we are so rapidly stripping our forests.

### CANADIAN MILLS GET BRITISH BUSINESS

One of the most important developments in connection with the Canadian newsprint industry is the large orders that have been booked in Great Britain by Canadian companies. This business has been showing tremendous increases during the past few months, as a result of the efforts of the Canadian Export Paper Company, which handles the output of a number of Canadian mills.

It is expected that there will be a further expansion of this business during the next couple of years, as reports indicate that the English papers prefer to do business with the Canadian mills as against companies operating in Norway and Sweden. Already several large shipments have been landed in England and it is expected that from now on considerable cargo space will be available for regular shipments from Canadian ports to London.

We know quite a few who "get by," but they don't seem to "get on."

# Pulp and Paper Magazine

OF CANADA

A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades

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*Weighing standard roll  
of news print paper on  
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## Cut Time and Labor Costs

—stop and figure out the time wasted in weighing and computing weights. It amounts to considerable in a year.

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VICTORIA.



# EDITORIAL



## "Merry Christmas"

Two little words of friendship,  
Two little words of cheer,  
Two little words we love to send  
To good friends far and near:  
Two little words of blessing,  
That brighten wintry weather,  
Two little words just made to link  
The hearts of friends together.

### SETTLED AT LAST.

What will without doubt be the last order-in-council for the regulation of newsprint paper in Canada comes as a Christmas present to both the manufacturers and publishers. The terms of the order are probably as fair could be by expected or accepted under the circumstances. A guarantee to the publishers that they will receive necessary supplies of paper for six months at \$80 is generous treatment. The inference that the law of supply and demand shall again rule after six months is as fair to one side as it is to the other. That period should provide time for such change in policy on the part of the consumer as the trend of events in the meantime may dictate. If prices of all commodities remain high and the demand for newsprint, by reason of extensive circulations, and advertising, great, then the price will surely be as high as at present if not higher, and wise publishers will trim their sails (and their sales) accordingly.

The Canadian publishers have the advantage over their American confreres in two ways, first as to price and second as to the length of time the order covers. They have what amounts to a six months contract at \$80. Across the line the publishers are glad to make contracts for three months at \$90. Stability of price and certainty of supply are very important considerations and the Government has done well in-so-far as these happy conditions have been brought about.

As to the papermakers, it looks as if the margin of \$10 that they lose is the price of relief from unneces-

sary restrictions after a definite period of time. This will permit them to adjust prices in accordance with changes in costs and conditions. Of course, some publishers will find it awkward to be on the same business basis with their suppliers of newsprint as they are with dealers in ink and machinery after having been subsidized at the expense of the papermakers for several years by order of the Government.

With the experiences of these past few years, we may all feel sure that if the publication of newspapers in Canada is ever threatened by unfair practices on the part of the papermakers, the Government will find some means of protecting from the wolves, the delicate members of the fold of Canadian businesses. The Board of Commerce is the logical agent for handling such matters although its activities so far have not been crowned with any marked success. But the publishers need have no fear of ill-treatment at the hands of the manufacturers; they are not inclined to return evil for evil but desire only to do business according to business principles. It does not pay to gouge a customer, as the Scandinavian papermakers and pulp makers are finding out in their relations with some Englishmen. Canadians may well consider the matter carefully when such opportunities arise.

An interesting feature of the new order is the attitude of the Finance Minister. From one of apparent indifference to the Pulp and Paper Industry on the part of this department there seems to have come about an appreciation of what the industry means to the Dominion. A great stir was made over the shipment of \$20,000,000 in gold to the United States, but the pulp and paper mills ship the equivalent of that every three months or less. The present Finance Minister realizes the value of these exports to every Canadian due to their effect on the exchange situation, not to speak of the many other benefits they bring in the way of employment and purchasing power. It is almost as if the football had become the goal-post.

### COBWEBS.

A newspaper dealer in a small town in New England has had as many of 2046 copies of a certain Boston paper left over in one month. In spite of numerous protests, this dealer has been receiving 30 or 40 copies per day in excess of the number ordered. A few instances like this would keep more than one small paper on its feet.

The principal exports from the Philippine Islands of interest to Canadians are Manila hemp, sugar and

cordage. The Islands imported in 1918 paper and its manufactures worth 3,683,982 pesos (1,841,991) and books and other printed matter valued at 1,211,292 pesos (\$605,646.)

The Saturday Evening Post may be said to be endeavoring to conserve paper if its advertising rates are an indication. It is reported that the inch rate has been made \$1.10. At this rate a page would cost \$6,860.

It now remains for some enterprising concern to run tractor trains on the ice from Clarke City to bring out some of that \$50 groundwood.

Has anybody tried to save that expensive groundwood pulp by substituting clay for a filler and using more sulphite?

Textile, electric and many other concerns will be glad to hear that vulcanized fibre and its multitude of conversion products will soon be manufactured in Toronto. The Diamond State Fibre Co. is coming North.

Toronto is getting to be quite a paper center. Canada Box Board Co. is also talking of establishing a plant here.

An estimate of Canada's fire losses for November, 1919, puts the figure at \$2,339,870, as compared with \$1,023,388 in October and \$1,059,580 in November, 1918. Two fires last month caused a loss of \$1,150,000, the Brown Corp.'s lumber mills \$800,000 and Laval University \$350,000. According to the Monetary Times, about 45 per cent of the fires this time of year are caused by heating apparatus. Surely an intelligent people can be instructed or obliged to be more careful. Not only is property destroyed, but frequently life also.

For once, our youthful craze for collecting stamps has proved useful. The advertisement of a firm dealing in foreign pulp contains the word "Suomi." We guessed it meant Finland, and on making inquiry, find we were right. Others have wondered about the meaning of this word.

The discussion of the Anthony Bill in Congress brought out some interesting comment on the newspapers as profiteers. The sentiment seemed in favor of cutting down the large papers to allow enough for the small paper.

The paper mill established at New Wiju, Korea, some time ago is now reported to be in working order, and the machines have made a trial run with satisfactory results. Preparations are in progress to start the manufacture of paper. The pulp-producing capacity of the mill is 1,000 tons a month.

A Bolshevik by any other name can raise just as much hell.

## LOYALTY.

(By Elbert Hubbard.)

Loyalty is a quality which prompts a person to be true to the thing he undertakes. It means definite direction, fixity of purpose, and steadfastness. Loyalty supplies poise, power, purpose, ballast, and works for health and success.

Nature helps the loyal man. If you are careless, slipshod, indifferent, Nature assumes that you wish to be a nobody and grants your desire.

Success hinges on loyalty. Be true to your art, your business, your employer, your "house."

Loyalty is for the one who is loyal. It is a quality woven through the very fabric of one's being, and never a thing apart. Loyalty makes the thing to which you are loyal yours. Disloyalty removes it from you. Whether anyone knows of our disloyalty is really of little moment, either one way or the other. The real point is: how does it affect ourselves?

Work is for the worker. Love is for the lover. Art is for the artist.

The menial is a man who is disloyal to his work.

All useful service is raised to the plane of art when love for the task—loyalty—is fused with the effort.

No one ever succeeded in business, or can, who wears the dial off the clock." Such a one may not be disloyal—he may be merely unloyal; but he is always ripe for a lay-off, and always imagines some one has it in for him.

And he is right—everybody and everything, including Fate and Destiny, Clio and Nemesis, has it in for him. The only man who goes unscathed is the one who is loyal to himself by being loyal to others.

Loyalty is the great lubricant of life. It saves the wear and tear of making daily decisions as to what is best to do. It preserves balance and makes results cumulative. The man who is loyal to his work is not wrung nor perplexed by doubts—he sticks to the ship, and if the ship founders, he goes down a hero with colors flying at the masthead and the band playing.

The hospitals, jails, and asylums, and sanitariums are full of disloyal people—folks who have been disloyal to friends, society, business, work. Stick and if you quit, quit to tackle a harder job. God is on the side of the loyal.

## THE DAM-KEEPERS DIDN'T DO IT

Mr. Arthur H. Graham, chief fire inspector of the Ottawa River Forest Protective Association, calls our attention to a statement made in the magazine for December 4th under the title "Forest Fires in Quebec," to the effect that the worst fires were caused by dam-keepers and river drivers of operators. Mr. Graham says:

"We believe this must surely refer only to some particular part of the province. This Association patrols approximately 32,000 square miles of Crown Timber Lands and the fires caused by dam-keepers and river drivers of operators and other causes by lumbermen did not exceed 5 per cent of our total number of 227 fires."

We are very glad indeed to have this note from the Association, and trust that the good results obtained from their efforts will be an example and an incentive to other parts of the Dominion in the matter of forest protection. We regret that the report was erroneous in regard to these particular limits and hope that this figure really does not apply to any lack of care on the part of pulp and paper companies elsewhere.

Southern Russia requires paper and machinery.

# Rags—Their Source, Classification and Assorting

By HENRY ATTERBURY, of Atterbury Bros., Inc.,  
New York.

The article which is here presented was prepared for the Textbook on Pulp and Paper Manufacture, under the direction of a Joint Educational Committee representing the industry in Canada and the United States. This article is published in the official organs of the Technical Association of the Pulp and Paper Industry and the Technical Section of the Canadian Pulp and Paper Association as an assistance to the work of the committee. The reason for thus publishing this and perhaps, at a later date, other portions of the textbook, is to obtain as many criticisms and suggestions as possible at this stage, so that the books will be practically correct when they appear.

Before beginning a description of the present method of collecting, assorting and packing rags for use in paper-making, a brief reference to the history of the industry, which has only reached its present volume within a comparatively few years, may be in order. After it was found that Papyrus, Parchment and Vellum were insufficient to supply the demand and the then known world was still groping for substitutes, in the year 704, Samareand was captured by the Moors and it was discovered that the people there were manufacturing paper from rags. The business was almost immediately transferred to Spain and thence to other countries, but for 1100 years it was carried on in almost as primitive a way as when discovered at Samareand, and there was but little improvement in method until the beginning of the nineteenth century. Cotton rags were used almost exclusively although linsens were used to a limited extent. Up to the year 1800, the average output of a mill was only about 5 reams per day, the rags were not bleached—white rags being used for white paper, and light colored rags used in making a printing paper of quality somewhat like what is to-day known as granite, and a better grade composed of white and colored rags having a hairy appearance. The dark colored rags were used in the manufacture of wrapping paper. It will be seen therefore that there was little assorting to be done and that the quantity required was not large. About 1801 in this country, stronger efforts to increase the supply of rags were started, and curious advertisements appeared in the newspapers, among them the following by John Clark and Company, of Martinsburg, N. Y.:

"Sweet ladies, pray be not offended,  
Nor mind the jess of sneering wags,  
No harm, believe us, is intended,  
When humbly we request your rags."

and the following by Zenas Crane of Walton, Mass.,  
February 5th, 1801:

"Americans, encourage your manufacturers and they will improve.  
Ladies save your rags, . . . . . as the subscriber intends to erect a paper mill in the following spring, and the business being very beneficial to the community at large, they flatter themselves that they shall meet with due encouragement, and that every woman who has at

heart the good of her country and the interest of her family, will patronize them by saving her rags and send them to the manufactory or the nearest storekeeper, for which the subscriber will give a generous price."

The state of Massachusetts also appointed one man in each town who was authorized to receive rags and the housewives were notified by advertisements or otherwise, to save them. The shortage in supply however never qualified the demand until the year 1865, when the discovery that wood pulp could be used in the manufacture of paper, appeared to have solved the difficulty. The increase in the amount of paper manufactured since then however, has managed to keep pace with the supply of rags and other material, until we not only use all the rags gathered in this country, but are looking to almost every other country in the world for supplies. Before the war, large quantities were imported from Germany, France, Egypt, Japan and other countries and the probabilities are that they will again furnish us a portion of our supply as soon as the ravages of war and the shipping situation will permit. From very humble beginnings and within a comparatively very short time, has developed therefore, this large business of collecting and sorting rags.

At present in this country, the method pursued in the collection of rags is about as follows: the small dealer or retailer, usually with a horse and cart and his string of musical (?) bells, starts upon his rounds, visiting his customers once a week or once in two weeks and purchasing from them, bottles, old iron, metals of all kinds, rubber, woollen and cotton rags, paper, and in fact almost every kind of waste material. Inasmuch as we are interested only in the cotton rags we will not follow him in his disposal of the other purchases, except to say that his profits on metals, rubber, etc., enable him to continue the business in which otherwise he would find it difficult to make living wages. His business has been assisted recently through the Secretary of Commerce at Washington who, in pursuance of his plan for conservation throughout the country of waste material, has sent broadcast, circulars calling upon housewives to save rags, metals, old papers, etc., and other material usually classed as waste, and sell them to dealers in such material in the nearest town. The former method of paying for such material in tin ware or similar goods has been largely discontinued and cash is now generally paid, although in some remote country districts the peddler with his tin and wooden ware may still be seen, and in many towns the storekeeper still takes in trade rags, metals, etc., keeping them until he has accumulated a sufficient quantity for a shipment of the state of the market is such as to induce him to sell. When held by the storekeeper the rags are usually sold to the dealers as mixed rags, consisting of woollens and all grades of cottons packed together. The collector usually disposes of his woollens and cottons roughly assorted, weekly, to a larger dealer who is supposed to grade them more closely and who sells to the mill direct, or to another dealer in some of the larger cities, when

the stock is again overhauled and repacked in a manner better suited to the needs of his particular customer. The rags, therefore, quickly pass through three or four hands before they reach the paper mill. The woollens are sold to the least dealer, mixed, and by him sold to a packer specializing in woollens, who assort them into thirty or forty different grades suitable for mills making different kinds of woollen goods, or to shoddy manufacturers who break them up into shoddy, or as it is now called "reworked wool."

Assorting the stock is done mostly by women, who first pick out the number one whites, consisting of large, clean pieces, and the number two whites, which are a little off color or somewhat soiled. In some sections the number two whites are packed with the large light colored rags and are called Twos and Blues, but in most places they are packed by themselves and the colored rags, if not too dark in color are packed together and are called Thirds and Blues. The Blacks and the very dark colored rags are packed together and shipped to the manufacturers of Roofing Paper. There is, as maybe supposed, considerable difference in the quality of these various grades depending upon the packers, and it is a little difficult to draw the line as to just what should be put in and the quantity. The National Association of Waste Trade Dealers and The Waste Merchants' Association of New York have both endeavored to meet this condition and in conjunction with the American Pulp and Paper Association have agreed upon a classification for the different grades which shows just what should be packed in each, as follows:

**Extra No. 1 White Cottons**—Large, clean white cottons, free of knits, ganzies, canvas, lace curtains, collars, cuffs, shirt bosoms, bed spreads, new cuttings, stringy or musy rags

**No. 1 White Cotton**—Clean, white cottons, free of lace curtains, ganzies, and canvas. Need not be as large as Extra No. 1 White Cottons. Must not contain musy or stringy rags.

**No. 2 Whites**—Soiled white cottons, free of dump rags, street rags, scorched rags, paint, greasy rags or oily rags. Also free from button strips and seams from higher grades of Whites.

**Mixed Whites**—Should contain at least 40 per cent of No. 1 Whites and not more than 60 per cent of No. 2 Whites. They must not contain any of the material prohibited in the grades of which they are composed.

**Street Whites**—Should be soiled white cottons from street or dump collection. They are likely to contain some foreign material resulting from the manner in which they are collected, but they must be dry.

**Twos and Blues**—Should be rags of strictly house collection and should consist of No. 2 White Cottons and Light Blue Checks and Prints. They should not contain the seams or buttens taken from higher grades of Whites, nor should they contain Dark Blues of any description. They shall not contain old corsets, small pieces of new rags or rags smeared with paint, oil or grease, nor should they contain any scorched rags.

**Thirds and Blues**—Should be rags of strictly house collection, and may contain light pinks, grays, greens and blues, but should be free from dark red, black, brown, quilts and feather ticks, canvas, tents and awnings, seams and strippings

from higher grade rags, or rags smeared with paint, oil or grease, small pieces of new rags or fine cut musy rags.

**Miscellaneous Blues**—Should be rags of all colors, free of solid black or satinot, street or dump rags must not be present in excess of 25 per cent.

**Old Blue Overalls**—To contain clean blue overalls only, free from oil, grease or paint and are understood to be free of miners' garments.

**Black Cotton Stockings**—To consist entirely of black cotton stockings in which white feet or edgings are permitted.

The Association of Roofing Manufacturers has classified the grades of acceptable and non-acceptable stock in Roofing Paper manufacture, together with the penalties to be imposed in case their orders are violated, as follows:

**No. 1 Roofing Rags**—Soft rags containing a percentage of wool. Satinet garments, including men's coats, pants, vests, mixed linsies, seams, women's coats, sacks and cloth skirts, all containing a portion of wool fibre.

**No. 2 Roofing Rags**—Cotton rags. Large and small cotton rags, including linings (without seams attached) silk rags, rag carpets, print rags and stockings.

**No. 3 Gunny-Babbing**—Free from fertilizer, charcoal, coal and cement sacks, chemical, lime and plaster bags.

**No. 4 Brussels and Hard Backed Carpets.**

**No. 5 Roofing Rags**—(A) Tailor rags free from all rubbish and paper.

(B) Tailor rags to contain not more than 10 per cent paper.

(C) Tailor rags to contain over 10 per cent and not to exceed 50 per cent paper.

#### Penalties.

Sellers shall furnish the buyers with disposition orders for rejected material within five days after rejection has been made and the seller been notified. Otherwise it is the buyer's privilege to store the goods at seller's expense, or make such other disposition as may be necessary.

The question of quality is still unsettled however, and there is a variation of price according to the reputation of the packer, and poor stock is still accepted when goods are scarce, while grounds for rejection are good when it is more plentiful. The difficulty seems to be that the small unreliable packer in competition with his honest associate will smuggle in a few bales of poor stock which the shipper is unable to detect and will be most strenuous in denying that his goods are those complained of. This is the reason why the large and reliable packer now repacks everything irrespective of the seller which, although it entails considerable expenses is compensated for by a great reduction in his bills for allowances. Disputes over mixed rags are also numerous, as unprincipled storekeepers or packers who sell them will occasionally assort from them a quantity of high priced woollens or the large whites and light colored cottons to be sold as Wipers for which, of course, he receives a much higher price, and there is no standard as to just what quantity they should contain, most of the contracts

reading, "Containing all the woollens, whites and light colors."

When the different assortments are made the rags are packed in large power presses and the goods are then ready for shipment to the different mills.

In the purchase of new stock, (new white and colored shirt cuttings, new collar cuttings and similar stock), owing to the fact that they are produced generally in large quantities, and the producer desires therefore to get as near to the consumer as possible, the small packer is generally eliminated and the goods are purchased by the large packer direct on contract usually running for a year. In times of depression the packer is often obliged to carry a large stock, which as the price is high involves a large investment and therefore only concerns having a large capital can afford to do the business.

The methods used in assorting and packing are practically the same as in old cottons.

Owing to the small quantity of linens made in this country compared with Europe, there was not, until the European supply was entirely cut off by the war, any attempt made to assort or pack linens, either old or new. Since 1915 efforts have been made to assort or pack linens here, but the amount produced is very limited and the business will undoubtedly be abandoned as soon as it is possible to resume shipments from Europe.

There is considerable difference in the packing and assorting of rags in Europe from the method pursued in the United States and Canada, caused principally by the difference in the cost of labor. On this side of the water the object aimed at is the production of the largest quantity obtainable with the smallest amount of labor, whereas abroad they look more to the production of uniform grades irrespective of the cost of so doing. This causes a larger increase in the number of hands employed, but increases the number of grades very materially. A packer in Europe will often employ from three hundred to four hundred hands and turn out only the same amount as would be packed here with a force of thirty or forty. The number of grades is, however very much larger. For instance, in France they make four or five different grades of White Cottons besides the same number of White Linens as against two or three grades of White Cottons containing all the Linens which we make. They pack two or three grades of Blue Cottons and four grades of Colored Cottons all of which, with us, would be packed together in Twos and Blues or Thirds and Blues. They assort and grade all the Cotton Stockings according to color, etc., most of them being used for extracting the dyes and for various purposes, whereas with us Black Stockings only are assorted and all others are packed into such grades as they are suited to. (Whites, Thirds and Blues, etc.) They assort from their Print Cottons those that contain the fast dyes, whereas with us no attention is paid to the fact of whether the dye is fast or not. These different assortments were those made before the war and whether, owing to the increased cost and scarcity of labor they will be abandoned or not, remains to be seen. French rags are very clean, cleaner than any, except the washed rags from Italy and are of a fine texture as a rule.

Italy has for many years imposed a tax upon the exportation of rags. This tax is so high that only the best grades can be exported. Consequently only number one and number two white cottons and first and second quality of White Linens together with a

few of the best grades of Blues are exported, all the other grades being consumed at home. The White Linens and Cottons are generally washed and dried before shipment and are exceedingly clean and of a bright color. They are of a thick texture and exceedingly soft.

Germany, before the war, was one of the largest exporters of rags to the United States. Assortment was about the same as in France, there being a preponderance of Blue Cottons and Linens, the texture being as clean. They assort, however, about as many grades and the methods of assortment are about the same. The principal grades exported, are Blues and Prints with a small percentage of Whites. The lower grades are consumed mostly at home. There are several large packing establishments in Germany, each of them covering several acres, but their use or labor in the past has always seemed extravagant. The rags are generally assorted upon an upper floor and dropped into bins on the floor below, where a circular railway carries a press to the front of each bin and the rags are then packed by hand into the press. This entails considerable extra labor which could be avoided by the use of one or two power presses fed from above by chutes. Probably the high cost of labor, as well as its scarcity, owing to the war, will bring about improvement in its use in the future.

Little Belgium enjoyed the distinction, prior to 1914, of producing more rags, in proportion to its population, than any other nation in the world. Ghent was the centre of the industry, although there are many establishments in other parts of the country. The quality of the rags and their general assortment was about the same as those of Germany and the reputation of the stock for uniformity and general honesty stood high. Owing to the number of Linen factories in the country it produced largely new Linen Cutting which enjoyed a high reputation.

Holland for its size and population produces a good many rags which have a good reputation for quality and cleanliness. The rags are strong and bright. Unfortunately some of the packers are in the habit of buying rags from other countries and shipping them as Dutch, which has hurt the reputation of the stock somewhat. A rag of pure Dutch origin is however of excellent quality.

Scandinavia does not produce many rags although there are some large establishments in Denmark. Most of this stock is sold in England. The rags are clean and of good quality. The assortment is about the same as in Germany.

Great Britain has many large establishments producing rags but a very large percentage of the output is consumed at home and only the lowest grades are exported. The paper manufacturers are obliged to buy a good portion of their supplies from the continent and from other parts of the world in spite of the large production in London, Manchester and Glasgow. England and the United States are the largest importers of rags in the world.

Austria Hungary has for many years prohibited entirely the exportation of rags unless a corresponding quantity is imported by the shipper. The import need not be of the same quality grade or price as the export but a shipment of woollen or linen rags may be offset by a similar quantity of cheap cottons or a shipment to the United States may be balanced by a return of the same quantity from France. There are some transactions entered into with other countries

but the amount of business is very limited owing to the red-tape involved.

Russian rags have heretofore been assorted, packed and shipped almost exclusively from Germany. Inasmuch as Russia has always grown large quantities of Hemp and the peasants have spun much of this into cloth, the rags received from there are mostly a very heavy home spun Linen and as the peasant does not willingly part with his clothes until they are almost beyond repair they are covered thick with patches and are far from the washed rags of Italy in cleanliness. Cottons are also packed to some extent but not nearly so extensively as Linens. These latter are assorted for color and strength into seven or eight different grades and are highly esteemed for adding strength to the paper. The business has of course been entirely cut off by the war and whether it will be resumed in the old way only time can tell.

In Egypt and northern Africa rags are brought from the interior many miles on canal back and sold to dealers in Cairo, Alexandria and other coast towns. It is interesting to see the Arab with his camel loaded with several hundred pounds of rags for which he will receive an equivalent of only a few shillings, travelling from the interior many weary miles and finally reaching his destination to return at once with the few purchases he can secure for the small amount received and yet Egypt produces thousands of tons of rags yearly. Owing to the long camel journey or for some other reason Egyptian rags are always distinguishable by their odor, which is different from that of any other collection. There are but few rags produced in other countries of northern Africa. Tunis collects a few which are shipped almost entirely to France and Algiers produces some, but collections in Morocco and Tripoli are negligible. The Egyptian rags are very dusty and dirty, composed mostly of Blue and Black Cottons and are exceedingly tender. For certain kinds of paper, particularly blotting, they are much liked, but owing to the high cost of freight, shipments have been made scarce since the war began, but will be resumed as the softness of the rag renders it essential for the higher qualities of blotting.

Japan formerly shipped large quantities of rags to the United States, the bales being of uniform size containing four hundred pounds each and composed of White and Blue Cottons, the latter largely predominating. They were of nice quality, very clean and were much liked by our manufacturers. Of late years no shipments have been caused by the growth of the paper industry in Japan and consequent use at home of their own waste material.

China has never shipped rags to this country to any extent. Those that were sent were of small size cottons and mixed. The texture was very light.

There are few shipments of rags from South America and the collections in the large cities are very small. A few come from Mexico and Cuba but in general it may be said that rags are collected largely only in well populated countries, and to a limited extent only in those that are more sparsely settled.

Imported rags are by regulation of the United States Government required to be disinfected under supervision of the consul and a consul's certificate attached to each set of papers before the rags are allowed entry at the Custom House. The disinfection is generally done by spreading the rags on racks in an air tight chamber and exposing them to the fumes of carbon dioxide for a period of twenty-four hours. The door of the chamber is sealed by the consul or his

representative and opened only by him at the expiration of the allotted time. The rags are then immediately packed and the bales stamped "Disinfected in accordance with the regulations of the United States Government under the supervision of .....". Although there is little doubt that the disinfection is sometimes done carelessly there is likewise little doubt that in the main it is properly performed.

There are certain characteristics in rags by which an expert can almost distinguish from what section of the world they originate and one familiar with the business can almost always tell without trouble the original home of each bale.

### THE SONG OF THE SULPHITE MILL

O the heavy air of the Sulphite Mill,  
(And the fumes will get you yet);  
And it's Goddam hard to work with a will,  
But the Boss, he say too much time we kill,  
And the pay no high eos the labor no skill—  
(But your throat you dare not wet.)

When the sulphur she burn blue and blue,  
And the place so hot and stinking;  
And mebbly if Big Boss only knew  
How much more easy to say than do:  
"Increase Number 1 and keep up Number 2,"  
Then praps he do some tall thinking.

Now the lig digester's full and hot  
And the Sulphite she cook steady;  
And praps you are thinking what's better forgot,  
How wood and iron and everything rot,  
And Laborers too most as likely as not—  
But you have to be there and ready.

And the fumes will come some time some day,  
The grey-green fumes and you can't get away,  
The green-grey fumes and you try to pray:  
"Saere! Mon Dieu! Saere! Saere!"  
Then it's blood at the nose and pain in the chest,  
Stabs at the heart and stabs in the breast:  
"Just earry him out—fresh air is the best,  
"Unfasten his clothing—let time do the rest;  
"Call it accident forty-one."

So it's accident number forty-one,  
Donat Bourassa—the son of a gun,  
Got a bit gassed on account of a leak,  
Dropped in his tracks with a sort of a squeak,  
Couldn't explain—though he tried to speak:  
In a day or two he'll be right as can be—  
(But I'm thankful it didn't happen to me.)

GEORGE W. E. DANIELS.

Editor's note: Don't compare this with Drummond; do a little thinking, then a lot of practicing.—Safety First.

### THE HICKORY TREE.

The hickory tree is said to have derived its name from the Indian word "Pawcohiccora." This was a kind of dressing eaten with hominy which the squaws made by crushing hickory nuts in a wooden mortar, adding water until it formed a milky liquid. Early settlers are supposed to have shortened the name to hickory. The Indians got a large part of their winter food from hickory nuts, some tribes in the South gathering as much as a hundred bushels per family.

# Practical Belt Lacing Directions

Description of the "Hinge" and the "Straight stitch" methods—the two most common plans.

There are several methods of joining the ends of a belt by means of rawhide lace leather. The two most common and practical plans for lacing belts are known as the "Hinge" lacing and the "Straight Stitch" lacing, which are described as follows in the house organ of Sadler and Haworth.

Whatever style of lacing is adopted, it is imperative that the ends of the belt to be joined should be cut at exactly right angles to the sides of the belt, and that the lacing be under uniform tension in order that the belt may run absolutely true when put into operation. Cut the ends of the belt to be joined perfectly true with a tee-square. Punch two rows of holes in each end of the belt. The holes in the second row should be punched directly back of those in the first row. The holes in both ends of the belt should also be exactly opposite.

### Directions for Lacing.

Put the lace through hole No. 5, drawing ends even. Butt the ends of belt together and pass each end of the string of lace between the ends of the belt as shown in the illustration.

Pass No. 1 lace up through hole No. 8, down between ends of belt, up through No. 5, down through No. 2, up through No. 5, down between ends again.

Put lace No. 2 down through hole No. 8, up through No. 11, down through No. 8, up between ends down through No. 4, up between ends, down through No. 7, up between ends, down through No. 4, up through No. 1, down through No. 4, up between ends, down through No. 7, up through No. 10, down through No. 7, up between ends, down through No. 4, up through No. 1. Punch hole with belt awl and fasten in usual manner directly back of hole No. 1.

To finish the other side, put lace No. 1 through hole No. 9, down between ends, up through No. 6, down between ends, up through No. 9, down through No. 12, up through No. 9, down between ends, up through No. 6, down through No. 3, up through No. 6, down between ends, up through No. 9, down through No. 12, then fasten end of lace back of hole No. 12, in the usual manner.

The illustration used with these instructions shows only three holes to each row. The same instructions apply whenever any odd number of holes are required to each row—simply start with the centre hole.

When the width of the belt requires the use of an even number of holes in each row, begin with either one of the two centre holes and follow the instructions already given.

Cut the ends of the belt to be joined perfectly true with a t-ro-square. Punch one row of holes in each end of the belt. The hole in both ends should be exactly opposite.

No holes should be less than one-half inch from the edge of the belt, nor nearer the end than one-half inch. The holes should be spaced about three-quarter of an inch from centre to centre.

### Directions for Lacing.

Butt ends together. Put lace through No. 3 and No. 8 from the grain side, drawing ends of lace even. See the following illustration.

Put No. 1 lace through hole No. 3, down through No. 8, up through No. 4, down through No. 9, up through No. 5, down through No. 10, up through No. 5, down through No. 10, up through No. 4, down through No. 9, and up through No. 3. Punch hole with belt awl and fasten in usual manner directly back of hole No. 3.

Put lace No. 2 up through hole No. 7, down through No. 2, up through No. 6, down through No. 1, up through No. 6, down through No. 1, up through No. 7, down through No. 2, and up through No. 8. Fasten lace in usual manner directly back of hole No. 8.

The illustration used with these instructions shows five holes to each row. The same instructions apply wherever any odd number of holes are required to each row. Simply start with the centre holes.

When the width of the belt requires the use of an even number of holes in each end of the belt, lace in accordance with the following direction.

Butt ends of belt together. Put lace up through holes No. 3 and No. 6, from flesh side (see illustration), drawing ends of lace even.

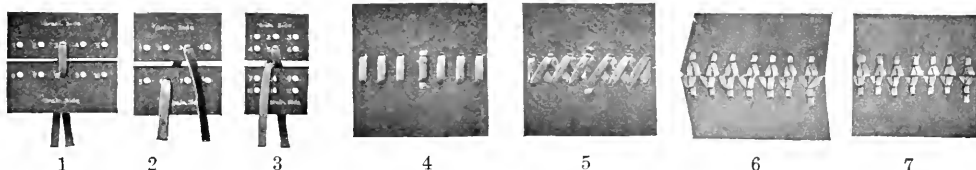
Put lace No. 1 down through hole No. 7, up through No. 4, down through No. 8, up through No. 4, down through No. 8, up through No. 3, down through No. 7, up through No. 2. Punch hole with belt awl and fasten in usual manner directly back of hole No. 2.

Put lace No. 2, down through hole No. 2, up through No. 5, down through No. 1, up through No. 5, down through No. 1, up through No. 6, down through No. 2, and up through No. 7. Fasten lace in usual manner directly back of hole No. 7.

The illustration used with these instructions shows only four holes to each row. The same instructions apply whenever any even number of holes are required to each row.

### FREIGHT RATES CONSIDERED

An important meeting of paper and pulp men and jobbers was held in Montreal Monday at the Pulp and Paper Association rooms to consider the proposed change in the classification of pulp and paper. Among those in attendance were John Martin, Norman Martin, Mr. Monroe and Mr. Dawson of the Canadian Paper Trade Association, and A. L. Dawe, T. J. Stevenson, Guy Toombs, A. D. Huff and Mr. MacFarlane of the Canadian Pulp and Paper Association. A meeting with representatives of the railways will be held on January 6th. The inauguration of the new rates is postponed to February 2.



1.—Starting a "Straight Stitch" with odd number of holes.  
 2.—Starting a "Straight Stitch" with even number of holes.  
 3.—Starting a "Hinge" lace

4-5.—The "Straight Stitch" on Grain (left) and flesh sides.  
 6-7.—The "Hinge" lace looks alike on both sides and gives very pliable joints.

## Pulp and Paper Possibilities in New Brunswick

Within the past decade the capital invested in the Canadian Pulp & Paper industry has increased from less than \$50,000,000 to nearly \$200,000,000, or nearly four times, the production increased from \$10,000,000 to \$100,000,000, ten times, and exports from \$5,000,000 to over \$63,000,000, twelve times, per annum. That this expansion is of a healthy financial character is evidenced nearly every week by new installations or the extension of existing plants, involving the expenditure of millions of dollars for machinery alone.

The Dominion Pulp and Paper Census recently issued for the year 1917, shows however that New Brunswick, whatever the cause may be, does not participate to the extent it should in this development, exporting as it does 61.0 per cent of its total pulpwood production, as against an average of 29.6 per cent for the whole of Canada. The percentage of consumption by provinces during 1917 was as follows: British Columbia 99.9 per cent, Nova Scotia 96 per cent, Ontario 86.4 per cent, Quebec 63 per cent, and New Brunswick 39 per cent, the latter having fallen from 49.1 per cent consumed of that produced in 1915.

Practically all the pulpwood imported by United States mills is from Canada, and the president of one of the largest pulp and paper companies there is authority for the statement that there is not a stand of spruce today east of the Rockies that would justify the erection of even a fifty ton mill, and wood costs there have gone up nearly 60 per cent in the past three years. Maine, New York, Wisconsin, New Hampshire and Pennsylvania are the leading States in pulp production in the order given, these producing 76.9 per cent of that country's total make of woodpulp in 1918, in which year the pulpwood imports were 33 per cent in excess of 1917.

The great mills of New York State, owing to high costs, now draw upon New Brunswick wood as well as that of Quebec Province, and it may be taken as a natural sequence that the equally important concerns just over the border in Maine will continue to do so to an even greater extent, although it is open to question whether this wood always comes from lands privately owned.

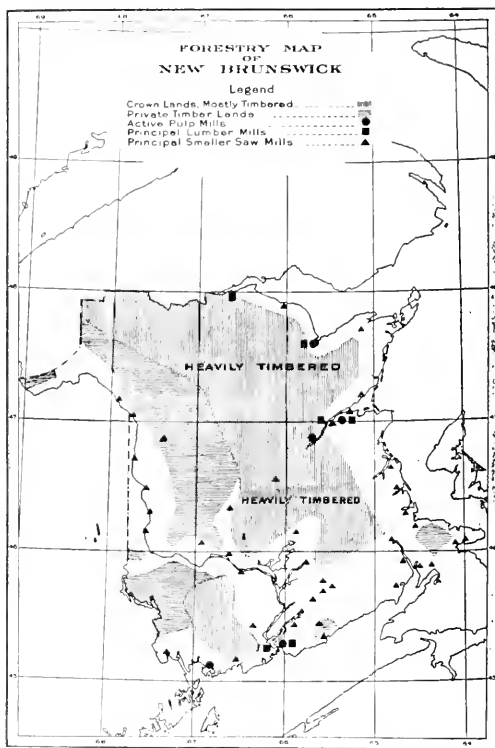
New Brunswick's forest lands in which spruce and balsam fir predominate, cover two-thirds of the area of that Province, and its water powers in connection therewith, estimated at 300,000 h. p., are but five per cent developed.

In view of this, what is said by the Chief of the Quebec Forestry Service, applies equally to New Brunswick, viz.:—"Instead of depriving ourselves of wood with little profit, we could use it to supply our own mills and instead of getting an average of \$7.40 per cord, we should by transforming the wood into mechanical pulp have a value of from \$20 to \$40 per ton. If transferred into chemical pulp the prices would vary between \$60 and \$90 per ton, and for newsprint paper they would return from \$40 to \$60 per ton." This statement is old but the truth is still good. Ed. On such a basis allowing one and a half cords to a ton of newsprint at \$60, the return from the pulpwood exported from New Brunswick in 1917 would have brought \$6,250,200 instead of \$1,145,967, its value in the rough.

Presumably the export of pulpwood will continue

to some extent, especially where land is being cleared for agriculture and private lands to which restrictions do not apply, are not provided with other means of disposal. However, such exportable wood need not be sent out so extensively as heretofore, if pulp and paper makers wish to conserve their own supply by purchasing more extensively of the wood out on private lands, the ratio of such purchase in 1917 being but one cord to five exported. Having already seen the need of tree planting for future supply, the conservation of limits by purchase of wood being exported seems reasonable.

Consider the ratio of consumption in New Brunswick mills to have been doubled, so that it would have been in 1917 78.5% compared with 86.4 per cent made use of by Ontario mills of the total production



This Map shows the proximity of pulp mills to forest areas.

of that year. To thus have doubled the output of chemical pulp alone, would have brought six additional mills of the present type to New Brunswick, or as an alternative, an installation of \$7,000,000 in the way of one or two larger mills producing paper as well as pulp. It would have given full-time employment for one thousand men, representing an added population of five thousand people in one or more new towns, in a new sparsely settled section, a pay-



roll of close upon one million dollars per annum, a home market for 85,000 tons more of New Brunswick coal, and 5,000 tons of limestone and lime, while to feed the clothe this small industrial army, the farms and factories of New Brunswick and all branches of production would correspondingly be benefitted.

That New Brunswick labors under no serious geographical disadvantage in marketing its product is shown by the neighboring State of Maine, leading the State of New York in the amount of wood consumed by its pulp and paper mills, and the fact that one of the most active mills of that Province ships its output of chemical pulp to Kalamazoo, Mich., twelve hundred miles by rail. Furthermore, the overseas demand has opened up new possibilities abroad, which according to the map, New Brunswick is in a good position to take advantage of. One of its most progressive lumbering concerns having recently gone progressive lumber the manufacture of chemical pulp is an indication of the turn of the tide in that province with respect to raw wood exported and also points to be increased profit of employing to the full extent the waste which

been exhausted, sawmills and woodworking establishments closed, subsidiary interests can no longer exist, the population moves away, farms are abandoned, roads and other public improvements deteriorate, and whole township and even counties are impoverished. This is not an occasional occurrence, it is the history of millions of acres of land once productive and now an economic desert. Let New Brunswick take head and build wisely.

H. P. TIMMERMAN,

Industrial Commissioner, Can. Pac. Ry.

P. S.—There are no paper mills in either New Brunswick or Nova Scotia, no ground wood mills in the former and as yet no chemical mill in the latter.

### BRITISH COLUMBIA

Vancouver, Dec. 16, 1919.—With the shortage of paper so great that the newspapers are talking of reducing the size of their publications, the cry is for pulp, and more pulp. The Province of British Columbia is becoming more and more the bright spot in the American Continent where the pulp manufacturers see a most favorable chance to help overcome the great shortage.

With the Whalen Company increasing their output in great jumps, the Pacific Mills working seven days a week, and shipping paper and pulp all over the world, the Powell River plant working to the limit, the Beaver Cove plant starting up the first of the year and other companies getting ready to start operations, 1920 will see a boom in pulp manufacturing in British Columbia that will swell the output of pulp from British Columbia to figures little dreamed of two years ago.

Without doubt in the next month or two there will be several new companies reported as starting active operations. The world is calling for British Columbia pulp and this wonderful province will surely deliver the goods.

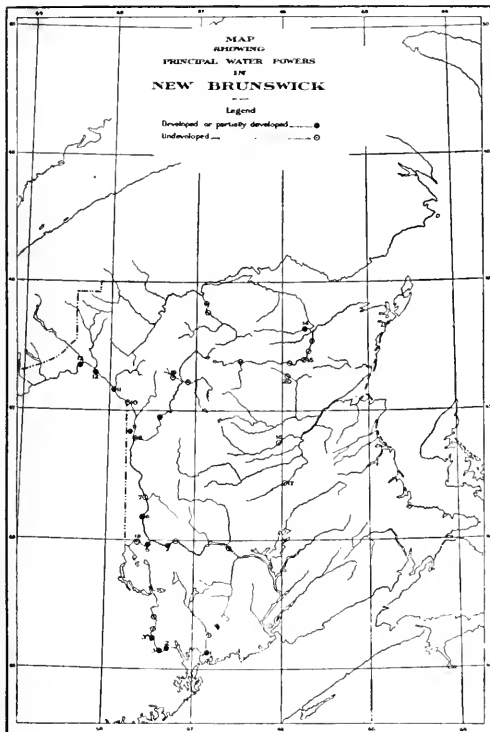
The Port Allice plant of the Whalen Pulp & Paper Co employs 500 hands, turns out 70 tons of pulp and 200,000 feet of lumber per day. The company also has nine logging camps on Quatsino Sound and has brought Davis rafts from the mainland. Coal is at present being used by the company, but a tunnel is being driven through the mountain tapping Victoria Lake, which will give over 300 feet head and great power, dispensing with the steam plant.

Rolland Paper Company Limited, Montreal and St. Jerome, are sending out a handsomely printed and lithographed book showing samples of their Earncliffe Linen Bond which is now being made in eight tints as well as white, and a copy of this may be had by anyone on application.

### \$100,000 FIRE LOSS AT CHICOUTIMI

A disastrous fire occurred at Chicoutimi, P. Q., last Saturday. Three business blocks, 22 houses and half as many stores were destroyed. Among the offices was the office of the agent of the Crown Lands. None of the records were saved, and this is a bad loss for the entire district. It is expected, however, that duplicates of the registration deeds burned may be available from the records of the Crown Lands Department at Quebec.

The loss is estimated tonight by city officials of Chicoutimi at close to \$100,000, and there is practically little insurance.



By comparing this Map with the other it will be seen that New Brunswick has a large number of water powers available for convenient use in connection with pulp and paper mills.

results from the operation of lumbering which is said to equal at least twenty-five per cent of the cut.

The United States Forest Service has found in that country hundreds of communities are suffering because the resource supporting their chief industry has

## Book Reviews

"MILLWRIGHTING" by Jas. F. Hobart, Publishers McGraw-Hill Book Company, New York, reviewed by A. P. Costigane, Secretary and Safety Engineer, Ontario Pulp and Paper Makers' Safety Association.

Many text books are issued which assume that the readers know the fundamentals, when it is really for the purpose of grasping the fundamentals that the buyer purchases a book. Oftentimes, too, when a purchaser gets a suitable edition for reference, the index is very poor and misleading. In this reference book these essentials have been very painstakingly attended to.

The very general character of the book, containing as it does information which is fully reliable, makes it a valuable source of information not only to the workman for whom it is primarily intended, but also to the contracting engineer.

Although much useful information on levelling up foundations is given, a description of the Abbey level might have been included. The Abbey level is a very handy instrument but is not much used on this continent.

Particularly good is the advice to inspectors of work being done to specifications, to allow small departures from the strict interpretation, provided the work does not suffer, rather than rigidly adhere to the letter of the contract, which latter attitude on the part of the inspector leads to general dislike and in many cases to unnecessary expense. Inspectors should be men of sound judgment and endowed with common sense based on experience.

The writer has frequently come across errors involving serious cost which the contractor could have pointed out while the work was in progress, but having been told to do so as the engineer and his contract called for, the contractor's good-will suffered and things were allowed to go on until the mistake became apparent to the inspector or his principal. This should also be borne in mind when laying out foundations to machine builders' plans. These plans usually allow for the worst conditions, but when ground is available, sound judgment would eliminate much of the material and excavation.

Sound advice is given to leave ample working room around machines. The inference being that although everything looks right on paper, the millwright should see similar machines under working conditions before fixing the drawing dimensions. If such a precaution was general there would be fewer accidents due to overcrowding of machinery.

The chapter on shafting, particularly in regard to the use of pillow blocks or wall brackets rather than hangers, on account of the end sway loosening and weakening the bolts holding them, might be followed with much advantage. It is to be regretted, however, that for the same reason a warning is not sounded against flying hangers to the ceiling or battens on the ceiling, by means of lag screws, a practice which is unfortunately too prevalent and which on the score of safety cannot be sufficiently condemned.

The layout of shafting from drawings in a methodical manner, and use of the particulars given in regard to belting, roller and ball bearings, would, if carried out, do much to remedy the hap-hazard methods of tackling the question of transmissions, too often

considered a necessary evil rather than the primary means of production.

In a book of such a nature it would probably have been worth the author's while to have said more on the scraping and fitting of bronze bearings to make them a good fit, attention being given to ample side clearance on the case of split bearings. Another point worthy of mention is the tendency to cut down the thickness of circular bushings; when this is done trouble usually follows. Circular bushings should be of sufficient thickness so that when they warm up they do not buckle slightly inwards and cause heating of the bearing.

Particular note should be paid to the calculations in regard to belt pulls. It has been observed and wondered at, that there are so few accidents through all machines being set on one side of a building, sometimes on three or four floors. The steady thrust on the sides of a building through this strain does not appear to be given much consideration. Heavy machinery stiffens the main floor and all the belt-pull on the overhead shafting tends to pull the roof toward the wall, whereas a little consideration in balancing would lead to greater safety and certainly fewer transmission troubles.

The excellent description of setting and lining up machines has reference to single spindle machines, as nothing has been said about taking diagonal measurements of multiple spindle machines to check contortion in the frame, a point likely to be a source of trouble if the one spindle nearest the driving pulley was lined up.

Other chapters on piping, boiler setting, useful hints etc., are as much as the millwright requires, making up a most complete and nicely balanced information book on a subject which has until now been very incompletely covered.

### PROTECTION OF STEEL

A paper on the subject of paint for the protection of steel work was read at a recent meeting of the Engineering Institute of Canada by Mr. John Grieve of the Dominion Paint Co., who spoke of the importance of co-operation between engineers and manufacturers of paint, and the desirability of the former acquiring a greater knowledge of the value of paints for the protection of steel. He gave examples of bad specifications of paints, the terms being so indefinite as to provide loopholes for the supply of inferior materials, which yet meet the specifications. Incomplete specifications were the cause of much trouble to the engineers. In some cases engineers and manufacturers co-operated, the latter being consulted on all points as to the value of paints for particular purposes, a course he recommended both as fair to the manufacturer and a protection to the engineer. The removal of scale was a most important point, as neglect to do this led to considerable trouble, while the purchase of standard paints of good quality was the only course to obtain satisfactory results.

One cause of great expense was allowing structures to remain so long unpainted that corrosion attacked not only the shop coat of paint, but the field coat as well. The cost of paint on steel structures varied from 3 to 13 per cent., according to the value of the structures, and the conditions to which they were exposed. In purchasing paint the cost should not be based upon the cost-price per gallon, considerations as to quality and suitability for the job, etc., should enter into the question.

## How Pulp Flow Is Regulated

The operation of the slush system of combining groundwood and sulphite pulps at the mills of the Laurentide Company is described in a recent number of *Le Digesteur*, mill organ of the company.

The former and usual method in most mills even now, was to run the sulphite over the wet presses and make it into laps which contained about 36 per cent air dry pulp. These laps were then weighed and sent to the beater room where they were unfolded and beaten up with the proper amount of groundwood and again reduced to about 3 per cent pulp. It can readily be seen what a waste of time and power it was to squeeze the water out of the pulp, weight it, truck it to the beater room and then put some more water in again. The reason why this apparently inefficient and round-about method was used was because there was no known reliable means of being sure of just how much water there was in the pulp in the slush state, except by testing, which required several hours and was impracticable. So it was necessary to run the sulphite into laps which were known to be around a 36 per cent test in order that the beater room might know just how much sulphite was put into the paper. It might be added, for those not versed in paper making, that sulphite is worth three times the amount of groundwood and furnishes the long fibre which holds the shorter groundwood fibres together into a sheet of paper. The amount of sulphite to go into the beaters must be accurately known, for if too little is used the paper is weak, breaks on the machine, and is not up to Laurentide's standards. On the other hand if more than enough to bring the sheet to requisite strength is used it is merely a waste of good money.

But a machine has now been invented which is so made that it will keep the percentage of stock to water in the slush practically constant. Enough so for practical purposes. This machine is the Trimbe Regulator, made in Glen Falls. After many tests it has proved out the claims made for it. The operation of it, in brief, is as follows:

A pump lifts stock to a head-box which connects with a valve through a pipe to the Trimbe head-box. The valve is so adjusted that only a small proportion of the stock being pumped enters the Trimbe. In the bottom of the Trimbe box is a small outlet into a large brass cylinder with a goose-neck and short length of pipe at the bottom. This cylinder is balanced on a beam with a weight at the other end. The stock flows from the head-box to the Trimbe box, from there to the cylinder where it passes slowly out through the goose-neck and pipe at the bottom. If the stock has too little water it becomes thick and has difficulty in passing through the goose-neck and so rises in the cylinder and moves the beam and by means of a ratchet mechanism opens a water valve in a pipe leading to the suction of the pump furnishing the stock. The water enters and mixes with the stock and reduces it to the proper consistence. In case the stock becomes too thin the action is just the reverse of that described; it runs freely from the cylinder allowing it to rise which shuts off the water to the pump and makes the stock thicker and dryer.

The entire slush system required considerable new apparatus and time to install. In the sulphite screen room basement two large concrete tanks were made to hold unregulated and regulated stock and two pumps were placed, one to pump the unregulated

stock to the Trimbe regulator and the other to pump the regulated stock to the sulphite measuring tanks in the deeker room.

In the sulphite screen room are six pneumatic thickeners which take the very thin stock of about 2 per cent test and remove enough water so that it tests about from 4 to 5 per cent. This thickened stock drops into the unregulated stock chest which feeds the regulator.

The groundwood department did not require so many changes as did the sulphite because it was already equipped with deckers which thickened the stock to nearly the right consistency so all that it was necessary to do was to install a regulator and a tank for receiving the regulated stock.

In the beater room the most radical changes are seen. Large tanks connect at the top with the sulphite measuring and groundwood regulating tanks. At the bottom they are connected to a large pipe line leading to the chest of the various paper machines and also to a rotary pump for mixing the sulphite, groundwood, coloring, alum and the other materials used in making stock for the paper machines.

All the valves in the beater room end are what are known as "Butler" valves as they were designed by one of the Laurentide engineering staff. They are operated by water pressure and may be controlled at any distance.

These valves are all controlled from a panel placed in the beater room. On this panel is also placed pneumerators which are attached to and indicate the amount of stock in any of the tanks. This control board is one of the prettiest pieces of apparatus to watch in the whole system. It is so laid out and painted that it practically gives a picture of just what is happening in the entire process of mixing the materials and sending the finished stuff on its way to the paper machine.

Each tank has its own square on the panels, containing the handle for controlling the valve and the recording and non-recording pneumerators. The squares representing the different materials are painted different colors to make it easier to understand while the pipe lines are laid out in white. It seems almost magical to watch; the control lever is moved and then the needle on the indicator obediently responds as the tank begins to fill. Then the stock is dropped to the next stage and the needle for the emptying tank drops while the others slowly rise. The whole process thus goes on, the big valves working silently and everything at the command of one man on the control board.

### SCANDINAVIA SUPPLIES FRANCE AND ENGLAND

The efforts to supply domestic markets just now is occupying the attention of the International Paper Company's officials to the exclusion of European business. With no means at hand to increase output to any large extent in the very near future it is practically certain that domestic demands will keep the mills of this country and Canada busy at least until 1921, and that only small lots of newsprint will be available for export.

Due to the shortage, exports of newsprint the past few months have been dwindling steadily. The Scandinavian countries, Norway, Sweden and Finland, have been supplying considerable pulp and newsprint to French and English markets recently.

Export prices for American and Canadian newsprint this week ranged between \$160 and \$180 a ton.

## BRITISH TRADE NEWS

(From Our London Correspondent)

London, Dec. 4. The paper industry of the United Kingdom is enjoying a brisk and prosperous spell, particularly in the newsprint and kraft sections. For raw materials there is consequently a more improved demand. Up to the present time quotations for paper do not show any material increase and the only high levels reached are recorded among the dealers who, outside of contracts, obtain higher prices for spot deliveries of fine papers. Newsprint remains unchanged, but the demand is good and supplies so far are plentiful in the market. Most mills are engaged on working off contracts on home and export account and the relations existing between employers and employees are most cordial. Indeed, mills could do with more skilled labor. The war has robbed them of their best and it is now that mills miss them in the speeding up operations. Of course the three-four system has made openings for more labor, which means a bigger wage-bill, and comparing the wages of a mill today with those of twelve months ago I find they are up 55 per cent. When one considers the high rate of wages, the high cost of coal and raw materials, and the freights existing on the railroads, it is remarkable how the British mill man can derive a decent profit on the sales of his papers at their present prices. In addition to these difficulties he has to face foreign competition and an erratic paper market.

### Competition and Paper Prices

Competition in the English paper market today is very keen and we are getting back to something like the experiences that confronted sellers in pre-war days. However, the war has made the British paper mill man more alert and he is now doing business in a way that he would never dream of before hostilities. He is out to keep the foreigner as much as possible away from the market and high freights at sea are helping him in many cases. For instance, good English kraft can be bought up to £58 a ton, whereas foreign, or Scandinavian, is a couple of sovereigns dearer. There are other instances. Dealers in foreign mill papers are, consequently, in an awkward position and added to this there is the fact that buyers for the time being are inclined to trade within the Empire.

### Mr. Dawe's Report.

Mr. A. L. Dawe's report on the British paper market, as published in the "Pulp and Paper Magazine" of November 13, has been read with much interest. It is notable for the spirit of impartiality that pervades it and some good sound common sense is laid down for Canadians to study. Indeed, some paper makers speak very highly on the report and consider the subject has been handled in a fair and masterly manner. "The British market is no place for weaklings or quitters," says Mr. Dawe. In these words he hits the nail upon the head. If Canadians want trade here they must "stick it," study the market, cater for it, and Canadian paper is bound to win.

### The Pulp Market

At the time of writing I find the pulp market in a very satisfactory position. It only remains for transport facilities to improve and were these rectified we would be in the land of milk and honey—for the time being. Buyers are plentiful for groundwood, sulphite and sulphate, and sellers, while anxious to do their best, are naturally trying to reach the top notch in prices. It is really a little rush before the

winter and hard months set in properly and at the same time the paper mills are for the moment getting through a lot of raw materials. Supplies of pulps from Scandinavia and Canada are flowing in satisfactorily and some fine shipments from the Dominion have arrived, notably ground wood. Buyers are here now and this week everything is merry and bright for all concerned.

### A Valued Pulpman

While Mr. Fred Becker has been giving his daughter, Eily, a fatherly hand-over in marriage to the care of Major Hays of Aberdeen, the employees of Becker & Co., Ltd., have been honoring and cementing their friendship with Mr. George Buchanan, one of the directors, who has just completed 25 years with the firm. Mr. Buchanan, like Mr. Becker, is one of the moving figures in pulp circles and is highly respected and valued in British business. He has done much for Canada. Becker's employees have given Mr. Buchanan a massive silver tea service to celebrate his quarter of a century with them and the present came as a great surprise to the recipient.

### Paris Troubles

I learn today that the strike in the Paris newspaper offices is fizzling out and once again the papers are reappearing, including the continental edition of the London "Daily Mail." The strike has been a sore blow to paper mills and sellers of pulp. For some days the city has been without a newspaper. France gives employment to about 30,000 hands in paper mills and 470,000 hands are engaged in the production of books, newspapers and catalogues, so that it will be seen the printers by going out on strike have given two industries a very serious set-back. One of the novelties during the strike was a consolidation paper, representing the most important of the daily journals.

### Prices in Paris

The paper mills are now being the object of attack in France. It seems that before the war a duty of 10 francs per 100 k.g. (about 2 cwt.) was imposed on foreign paper over a certain weight. During the war the French mills agitated and got a temporary increase of 50 per cent on these duties with the result that newsprint costs 125 francs and heavy paper for illustration work runs up to 300 francs. The mills want to maintain their war prices and they are about to ask for legislation to protect them. They are being opposed, it being contended that the excessive import duties should be removed to help trade.

### Notelets

G. F. Steele, Canadian Export Paper Co., has been on a visit here. We like to see Canadian paper men here studying the market.

The employees of H. D. Pochin & Co., china clay exporters, have thanked the firm for keeping all workers fully employed during the war—not an easy task in the trying period of reduced trade.

Thos. Owen & Co., Ltd., Cardiff, who make newsprint, are paying an interim dividend of 2s per share on ordinary shares for the past half year.

A pulp store 80 ft. x 50 ft. at the Galloway Paper Mills near Edinboro, and all the pulp in it has been destroyed by fire.

Canada in 1914 imported from the British mills 202 tons of wall papers (printed) and in 1918 about 12 tons—a reduction of 190 tons.

Out the rat and rap the fly, for health and safety, that's why!



## Technical Section



**A-1. Wattle bark as paper-making material.** Le Bois, thru *Papeterie*, **41**, 455, (Oct. 25, 1919). Spent wattle bark yields 28-35% (according to the method of treatment) of an unbleachable pulp, suitable for dark wrapping paper. Tests on a commercial scale yielded 18-30%. The wood yielded 46-50% pulp, but the fibers are short and the paper not strong. It could be used for the manufacture of straw-board, especially if mixed with longer fiber such as that from the bark.—A.P.-C.

**A-3. Paper-making prospects in Egypt.** *Paper*, **25**, 371, (1919). The important paper-making materials available are rice straw, colored cotton rags, and waste paper, which would limit manufacture to cheaper papers, cartboards, and wrapping papers. Papyrus, reeds, and bagasse may eventually be convertible to good white paper by new and improved methods. Assuming a 50% yield of pulp from rice straw on the average of all qualities of paper imported into Egypt, 40,000 tons of straw would be equivalent to the yearly imports. About 230,000 tons of straw are produced yearly.—A.P.-C.

**A-3. Esparto.** (L'alfa). J. Cittanova. *Le Papier*, **22**, 270-2, (Sept. 1919). A sketch of the esparto industry in Africa, and of its use in paper-making.—A.P.-C.

**A-3 Weed-grasses as a source of paper pulp.** (Développans l'industrie de la pâte à papier). Jean Letorrie. *Rev. Univ. Papeterie*, **2**, No. 9, 4-5, (Sept. 15, 1919). Discussion of a bulletin of the Académie d'Agriculture by Félicien Michotte. The present sources of paper are:—First, wood pulp; Second, waste from spinning mills; Third, old rags; Fourth, old bagging and cordage; Fifth, esparto and its substitutes; Sixth, waste paper, Seventh, cereal straws. For various reasons the production and consumption of esparto pulp will remain stationary; there is already shortage of spinning-mill waste, rags and waste paper; and cereal straws should be used for agricultural purposes. Wood, therefore, remains practically the only important source of supply. The use of wood as a source of paper was a big mistake in the first place, as the paper trade consumes wood ten times as fast as it grows. The use of grasses should be encouraged as much as possible. These may be divided into two classes, those which are already cultivated for some other purposes, such as the sugarcane and pineapple, and those generally known as "weed," amongst which is esparto. The latter offer a very wide field, and include both terrestrial and aquatic varieties. They should be studied with a view to determining the extent and feasibility of working existing growths, and the advisability of introducing them into barren and marshy lands in Europe, America and Africa. Another possible source of paper is pineapples. Fr. patent 493,551. R. Ariès, covers a process for making paper pulp from pine needles.—A.P.-C.

**A-4. 5. Methods of sampling pulp and other testing methods.** W. H. Gessell, Chairman of Committee of T. A. P. P. I. *Paper*, **25**, 296-303, (1919). The Canadian Committee on Testing Moisture in Pulp (E. B. Slack, chairman) find that the strip method is satisfactory for ordinary wet machine lap pulp and also

for sheet pulp from Roger's wet machine, and that the wedge method is more accurate and gives lower results for hydraulic pressed pulp. For the bale pulp insufficient work was done to make any definite recommendations. A method for testing moisture in roll pulp is given. A set of rules for official weighing and testing of pulp, formulated by F. W. Williams as a basis for discussion, and also the official rules of the Ass. of Am. Woodpulp Importers are given. No progress has been made as regards testing moisture in rags. A comparison of the  $\text{Na}_2\text{S}_2\text{O}_8$  method,  $\text{NaNO}_2$  method, and  $\text{NH}_4\text{Cl}$  and  $\text{NH}_4\text{OH}$  method of determining  $\text{Al}_2\text{O}_3$  in alum showed that the first two checked very well and were more accurate and rapid than the  $\text{NH}_4\text{OH}$  precipitation. The specifications for CaO for cooking rags should call for a minimum content of available CaO and a maximum limit for  $\text{SiO}_2$ . The U. S. Government is investigating the numerous methods of determining available CaO in lime. The Association enquires as to the exact conditions under which bleaching powder is used in pulp and paper mills. R. W. Sindall is endeavoring to form an English association similar to the Can. and Am. P. & P. A. which would co-operate with the latter in establishing standard methods of testing.—A.P.-C.

**A-14. Effect of humidity on the strength of paper.** *Paper Maker's Monthly J. Papeterie*, **41**, 455, (Oct. 25, 1919). Hygrometric conditions greatly affect the strength of paper a decrease in humidity being accompanied by an increase in strength and by a decrease in elongation and resistance to folding, and vice versa. In certain cases resistance to folding is decreased by excessive humidity.—A.P.-C.

**A-14. Testing paper at the bureau of standards.** *Paper*, **25**, 358, (1919). The reading in the determination of the tearing strength of paper are affected by the length and breadth of the sample, the rate at which pressure is applied, the length of the fibers, and the condition of the end of the sample, i.e., whether clamped or left loose. Tests are being run to determine the deterioration of paper. Samples which had been tested in March 1909 showed an increase of 20% in alcohol extract and a decrease of 27 per cent in strength, which may be due in part to errors in former methods of testing.—A.P.-C.

**B-2. Reforestation in France.** J. Micol de Portemont. *Papier*, **22**, 290-2 (Oct. 1919). A discussion of the urgency of restoring the French forests and of the advantages of the various kinds of poplar for this purpose.—A.P.-C.

**B-3. Conservation of the French forests.** (Ressuscitons nos forêts). J. Micol de Portemont. *Le Papier*, **22**, 268-70, (Sept. 1919). An analysis of the timber resources of France, of the consumption before the war, and the probable consumption for the next few years. This will be much higher than in pre-war years, owing to reconstruction and to the practically certain increase in the consumption of paper. It would be inadvisable to curtail French exports, but imports should be cut down as far as possible. The only solution lies in reforestation, which should be started immediately and pushed vigorously, together with a more complete utilisation of the wood.—A.P.-C.



# UNITED STATES NOTES

A bill appropriating \$1,000,000 for a survey and development of a national program looking to the conservation of present reserves of material for making print paper and to reforestation of areas for making future supplies may be produced, was introduced last week in the Senate by Senator Poindexter of the State of Washington. Drastic proposals for reducing consumption of paper had been urged, said the Senator in explaining his measure, based on the assumption that the supply of pulpwood was nearing exhaustion. Whether that was true, he said, could be known only from a proper survey, such as never had been made. He insisted that there is pulpwood in the Northwest ample for many decades to come; that only two small mills are making paper in Washington, and that paper can be made there on an enormous scale cheaper than in the East and delivered by sea transportation below Eastern prices. "If the pulpwood supply in the Northwest actually exists," Senator Poindexter said, "the survey will go far toward compelling Eastern paper manufacturers to abandon their claims of acute scarcity and stop profiteering." The conservation and survey measure sets forth the following facts: The pulpwood used in the United States last year for the manufacture of all kinds of paper and wood pulp amounted to 5,500,000 cords, of which 1,800,000 cords were used for newsprint. Of this two-thirds was imported from Canada. Approximately one-half of the newsprint produced in the United States was manufactured in mills in the State of New York. It is estimated that the pulpwood stand in New York will be entirely exhausted within eight or ten years. It is also estimated that the pulpwood stands of the Northwestern States will be exhausted within ten to twenty years.

Due to the non-arrival of several consignments of newsprint at its plant, the Pittsburg "Post" was compelled for several days during the week of December 8 to curtail the size of editions to eight pages, barring all advertisements, and carrying only news. It reappeared in its regular size last week when the amount of print paper required daily began to reach its press-rooms according to schedule.

While stopping recently at Kalamazoo, Mich., where he inspected several of the big paper-making establishments, Walter Sessions of St. Austells, England, one of the three managing directors of English China Clays, Ltd., a concern which turns out over 500,000 tons of clay annually and controls a great proportion of all high grade clays suitable for paper making, stated that one of the objects of his visit to this side of the Atlantic was to look over the American business situation with a view to considering the future requirements of the trade so that plans can be made to meet the demands likely to be made upon the company with which he is associated. "The English Government," he said, has co-operated with us to revive our business with the close of hostilities. Our shipping port, Fowey, Cornwall, has been materially improved and working hours lengthened to overcome the scarcity of labor. Through arrangements with the Shipping Board we have been able to charter fif-

teen ocean-going steamers for our use exclusively, thus making it possible to insure prompt and adequate shipments to the American market."

While conceding the necessity of immediate reduction in the use of print paper on the part of all publications in the country, the prevailing opinion among more than a dozen newspaper and magazine publishers who appeared last week at the hearing before the House Post Office Committee on the Anthony Bill was that the threatened shortage could be better met by voluntary agreements of publishers with the Government than by direct restrictive laws. Strong opposition to the Anthony measure, which if enacted would exclude from the mails all publications not conforming to certain size limitations, was expressed by the majority of the publishers. The general opinion was that the matter should be turned over to the Federal Trade Commission, with a request from Congress to determine what reduction is necessary to assure a just supply to all. The Commission, it was pointed out, has complete figures on paper production and consumption, and can designate a percentage reduction for all publications that will relieve the situation. All the publishers present promised that any conclusion by the Commission would be complied with voluntarily. This plan was proposed by Frank P. Glass of Birmingham, Ala., President of the American Newspaper Publishers' Association, and Bradford Merrill, of New York, president of the association's conservation committee. A 10 per cent reduction in the paper used by the newspapers would relieve the shortage, Mr. Merrill, thought, although, he said, the publishers would be willing to leave the percentage to the Commission.

An addition to its plant at Edgemont, Ohio, by which 8,000 square feet of increased floor space will be had, is being erected by the Standard Register Company. This concern is regarded as one of the heaviest consumers of register paper in Ohio. A modern printery is part of the equipment of the present plant.

## UNCLE SAM TO SAVE NEWSPRINT

Washington, Dec. 19.—A movement was started in Congress today looking to a reduction in the amount of newsprint paper used by Government departments. Chairman Steenerson, of the House Post Office Committee, introduced a resolution calling on the departments to report immediately the amount of print paper used by them and whether a ten per cent reduction could be made. The departments also would be asked to state whether the large amount of printed matter furnished newspapers which do not request it, could not be discontinued.

To determine whether newspaper publishers abide by the request of the Post Office Committee to reduce their consumption of newsprint by 10 per cent for the next six months, Chairman Steenerson introduced a resolution asking the Post Office Department for comparative weights of newspapers entered at first and second class post offices for the last six months, and for the next six months. Action on the resolutions was deferred.

# PULP AND PAPER NEWS



In view of the fact that there is considerable complaint among the manufacturers of paper with the cheaper dyes they are under the necessity of using in their colored bonds and other lines, it is interesting to note that the Canadian Trade Commission states that it is prepared to receive applications from Canadian firms requiring German dyestuffs, upon which the Allied Governments have an option under the Peace Treaty. Interested parties are invited to communicate with the Canadian Trade Commissioner and obtain forms on which applications may be made for estimated requirements for the next six months. It is stated that any demand which appears to be excessive will not be acted upon until the matter is investigated and found satisfactory. The applicant is obliged to sign a declaration that the dyes asked for are unobtainable on reasonable terms from British, Swiss or United States sources.

Work has been commenced on the hydro power plant on the Saguenay River in connection with the prospective construction by Priece Bros. & Co. of what will be the largest pulp and paper mill in the world. The mill is expected to have a capacity of between 400 and 500 tons of newsprint. The creation of a town of Saugeny is involved, to be located three or four miles east of Chicoutimi, which will have a population of about 7,000 people.

On April 1 next a new weekly paper, to be called the United Farmer, will be published at Moncton as the official organ of the United Farmers of the Maritime Provinces. George F. Chipman will be the Managing Director and G. G. Archibald, Editor, and the paper will be published in conjunction with the Grain Growers' Guide of Winnipeg. It will be owned jointly by the United Fruit Companies of Nova Scotia, the United Farmers' Co-Operative Company of New Brunswick and the United Grain Growers, Limited, Winnipeg.

A despatch from New York states that the International Paper Co. is diverting fifteen machines which have been manufacturing fine paper, to the manufacture of newsprint. It is estimated that the machines diverted will have a daily capacity of 200 tons, and will add approximately 60,000 tons a year to the company's present output. Action of officials of the company in diverting these machines is in response to world-wide demand for newsprint which is likely to continue for some time. This year's output of newsprint of the International Paper Company will amount to around 315,000 tons, exclusive of fine papers. Production of newsprint in 1918 was around 390,000 tons. Shrinkage in production this year compared with 1918 is ascribed to continuation of war-time restrictions placed on the industry and general poor labor conditions.

Of considerable interest to the Canadian pulp and paper industry is the statement made by a United States Senator while urging the enactment of a bill for a Government survey of pulp timber in the Northwest. He declared his belief that this timber would supply enough pulp to end the present shortage of newsprint

paper and supply all publishers for decades to come. "If the pulpwood supply actually exists," he said, "the survey will go far towards compelling Eastern paper manufacturers to abandon their claims of acute scarcity and stop profiteering." He proposes an appropriation of one million dollars for the survey. It will be found, he says, that newsprint can be made in Oregon, Washington and California at a cost that will permit the product to be sold at prices far below those now being charged by Eastern mills.

The announcement was made in Toronto this week that J. C. Ross of Montreal had been appointed editor of the Farmers' Sun and his many friends are congratulating him on his new appointment. Mr. Ross was born near Embro, in Oxford County, Ontario, and commenced his journalistic work with the Toronto Globe as special representative at Cobalt during discovery and boom days. Eight years ago he went to The Journal of Commerce when the Journal was published in Montreal, but resigned his position when it was changed from a daily to a weekly. Mr. Ross then became special representative of The Globe, but shortly after re-entered trade journalism. W. L. Smith is at present acting as editor of the Farmers' Sun. Mr. Ross has also served as acting editor for the Pulp and Paper Magazine during the absence of Roy Campbell in Europe in 1916 and of the present editor in Western Canada in 1918.

Canadian newspaper circles were interested in the despatch from Washington this week which stated that every newspaper in the United States had been called upon by the House Post-Office Committee to reduce its consumption of newsprint paper by ten per cent for a period of six months, in an effort to relieve the present serious shortage, which the committee had been told threatened the destruction of a number of small papers. Voluntary co-operation of publishers would obviate the necessity for repressive Government action, stated the committee, which added that if the publishers carried out the voluntary conservation plan, further action on the Anthony Bill, to limit the size of newspapers and periodicals using the second class mail, would have to be stopped for the present at least.

A visitor to Toronto this week was E. S. Crabtree, formerly manager of the Haupt Paper Mills at Camden East. Mr. Crabtree is now with the Bathurst Lumber Company.

Some further particulars are now available concerning the expansion of the Canada Box Board Company, Limited, which organization held its annual meeting in Toronto recently. The Company has several sites in view on the city's water front and when the location is selected a mill will be erected with a capacity of 40 tons of the finer grades of box board a day. The mill will be equipped with the latest and best machinery available and the program of expansion also includes additional installation of equipment in the company's plants at Frankfort and Montreal. It is learned that J. G. G. Kerry, President of the Northumberland Paper

and Electric Company, manufacturers of various kinds of board at Campbellford, Ont., and associates, have bought out the interests of the late Robert Kilgour in the Canada Box Board Company, which gives the interests associated with the Northumberland the control of the Canada Box Board Company. It is understood that the plant will be operated under separate management for some time but consolidation will doubtless be effected in the near future.

#### A QUESTION OF MILL SITE

The Hydro-Electric Power Commission of Ontario have had conferences lately in Toronto with delegations representing Port Arthur, Fort William and the principals of the Great Lakes Pulp and Paper Company, which organization is preparing to erect a four million dollar plant for the manufacture of pulp and paper adjacent to the twin cities. The visit of the delegations to the Commission had to do chiefly with the power that will be required to operate the plant. This will amount to from thirteen to sixteen thousand horsepower and it will be supplied from the Nipigon Development Works, the contract being made direct with the Hydro Commission.

While the matter of power had to be arranged with the Commission the delegations also took up with Sir Adam Beck the question of a site for the proposed mill and in this, of course, they were passed on to the Ontario Government. Naturally, Port Arthur and Fort William want to share alike in the benefits to be derived from so important an industry. Fort William wants to have the mill on a site between the two places. There is a free site available east of Port Arthur, it is said, and if the mill is located there the municipality will probably agree to extend the street railway and the telephone system to the site and also put down a macadam road. There are timber limits east of Port Arthur adjacent to the proposed site, which are said to have been transferred to the company by one of the promoters who secured them from the Government and which naturally promise to influence the company to locate there where the pulp timber can be easily and economically handled. These facilities, however, do not loom so large in the eyes of Fort William as they appear to its rival and the delegation from Fort William is said to have asked Premier Drury to cancel the sale of the timber limits in order that Fort William claims to have the mill located between the two places might be advanced with greater chances of successful results. The Government is considering this phase of the matter now, but it is understood that the Government is averse to interfering in the matter, taking the ground that it is up to the company to listen to the arguments of the rival claimants and then decide the issue for itself.

#### WAYAGAMACK BUYS PULPWOOD LIMITS

The Wayagamaek Pulp and Paper Company has made a most valuable addition to its holdings of timber limits by the purchase of the well-known Breakey Limits in Gaspé, on the south shore of the St. Lawrence. The limits, which are situated on the York River, cover a total of 450 square miles and will be particularly valuable to the Wayagamaek Company, as 90 per cent. of the timber on the limits is spruce, which is just the kind of wood the company requires for the manufacture of kraft products.

The York River is drivable through the entire length of the limits now acquired, and it is the in-

tenition to ship to the Wayagamaek plant at Three Rivers by means of steam barges.

This new acquisition will place the Wayagamaek Company in a very strong position as it will now have very valuable limits in the St. Maurice district on the north shore of the St. Lawrence and the Breakey limits on the south shore.

It is understood that it will not be necessary for the company to effect any additional financing in connection with this important purchase.

#### KIPAWA MILL STARTS WITHOUT A HITCH

The official announcement was made last week that the Kipawa Fibre Company, which is controlled by the Riordon Pulp & Paper Company, was now operating their new pulp mill at Temiskaming, and the pulp shipments would be commenced next week. Of the output, nearly the whole amount will find a market in the United States. The parent company's product to the extent of 90 per cent also goes to the States. Here, too the exchange situation favors Riordon and it was stated that if the premium from New York funds remained at 8 per cent for a year the advantage to the company would be more than sufficient to pay the entire common stock dividend. The product of the Kipawa Company is claimed to be by far the finest grade of pulp made on the American continent and quite equal to the best that Scandinavia produces. Very rapid progress has been made on the Kipawa mill and the fact that the output is being shipped this year comes well within the estimate made many months ago.

#### U. S. OWNS ALASKA FORESTS; DEVELOPMENT HINDERED

Competent observers claim that the Territory of Alaska can furnish an abundant and perennial supply of wood pulp timber, and representatives of capital interested in the industry have been looking the ground over and seem to be of the same opinion.

If the supply is there it should be utilized. The stands of our Northeastern States are approaching exhaustion, and while Canada still has an abundance of suitable timber, the Canadians insist that the profit of its exploitation shall accrue to Canada and not to us. As we should doubtless feel the same way if we were in the place of the Canadians, we are hardly in a position to complain. In so far, however, as American citizens own Canadian timber land in fee, we might, if we chose, start a quarrel closely resembling that which we have with Mexico over oil land. Canada, however, is different.

But the Alaska pulpwood timber should be utilized. It is stated that the reason why it has not already been exploited is that it is all on Government land, and it will not pay to cut the timber under the regulation of the Bureau of Forestry, which requires that the cutting must be so done as to assure reproduction on the cut-over lands.

It appears to be the fact that cutting will not pay unless a clean sweep is made without too much unproductive labor in the interest of renewals. It is claimed, however, that the Alaskan fir forests will reproduce themselves under any circumstances, as the growth is spontaneous and very rapid during the short summers, and that with few restrictions in cutting, forests will reproduce themselves forever.

It is stated that relief is expected either from the Forestry Bureau or Congress, when large operations may be expected at once.—San Francisco Chronicle.





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, December 20, 1919.—“Even more acute” describes the situation in regard to the paper situation this week. Practically all classes of paper, from newsprint to wrapping paper, are undergoing the same experience as to shortage of manufacture and increasing demand, and the manufacturers and jobbers are at their wits’ end in their efforts to respond to the calls of the consuming public. There appears to be no serious attempt at economy or conservation of supply. The supplies are gradually used up as soon as they can be delivered, and orders upon orders are going into the mills on the off-chance of securing a portion of a shipment at least. One big Ontario paper mill, devoted chiefly to book papers and bonds, has ceased booking orders. They also buy paper when they can, but, unable to secure any stock and with their own manufactured lines sold up months in advance, they simply ration their output to their customers, big and small alike, as far as possible and when they have any paper ready to ship they send out notices that they are sending what paper they can spare at prices prevailing at time of shipment. Practically all the mills have withdrawn their price lists, and the future holds no promise of clearing up the uncertainty that exists in regard to prices, supply and demand generally throughout the trade.

While the pulp and paper companies are thriving under the high prices prevailing, the shortage, particularly of newsprint, continues to cause great uneasiness. The consumers of newsprint saw brightened prospects when it was announced that the Dominion Paper Controller had been given power to prohibit the export of the output of any concern which disregarded the Controller’s regulations as to price or supply to Canadian newspapers. Of the 800,000 tons of newsprint annually produced by the Canadian mills from Canadian pulp, from 80 to 85 per cent has been exported, and it was considered that the remainder has been sufficient to meet the demands of the Canadian publishers. In connection with this the Paper Controller has fixed the prices. It is said that as a result of the paper famine in the United States, and the fact that there is no

longer a fixed price there, Canadian mills have shown, in some cases, an inclination to disregard the regulation and to export their output to its full extent. The Paper Controller, however, has announced that he does not propose to bar the export of newsprint and puts it up to the Government. While not prohibiting the export, Mr. Pringle has laid it down that each Canadian mill will supply its proper quota to Canadian publishers or suffer a penalty, and if they are not satisfied as to this they may have recourse to the courts. It is contended by some that the gist of the whole matter is the great difference in price between Canada and the United States. Canadian mills bearing more than their share of the financial burden of supplying Canadian papers, do not wish to continue longer making such sacrifice, while willing to bear their share of the general burden. In this connection one of the Companies, in whose mill newsprint has been manufactured for many years as one of the lines, has notified their customers that they had been manufacturing and supplying newsprint at a loss throughout the war, and that they were now going out of that branch of the business just as soon as circumstances would permit.

In the meantime the paper companies are proving that the extraordinary rate of exchange in respect to Canadian and United States money is not an unmixed evil, for it has been pointed out on the streets here in Toronto that the pulp and paper companies in Canada have struck what almost looks like a bonanza in the fact that their export of pulp and paper to the States is paid for in the currency of that country. This means that they are getting substantial benefits through the exchange rate which should help some in the paying out of dividends.

Last March the price of kraft was fixed at 9 cents and it has not varied since then. The demand for this of paper keeps up, and all the mills that are making it are booked away ahead and have more orders than they can fill. The same conditions hold good in respect to envelop, papeterie and other stationery lines and prices in these goods remain firm with an ever-growing demand which the manufacturers find it hard

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to meet owing to the continued shortage of paper. There is no change in the market as regards wrapping papers, although the jobbers and manufacturers are somewhat disturbed by the announcement that the Canadian Freight Association proposes to transfer wrapping papers from Group A. to Group B, leaving newsprint and unfinished paper in rolls for coating and unfinished wrapping in Group A. This will mean an increase of from three to five cents per one hundred pounds on wrapping paper. It is pointed out that wrapping papers have an advantage in storage in cars according to ton weight, and as the competition in this line of paper manufacture is very keen, the wrapping paper men cannot see why they should be called upon to meet the added expense of a change in the grouping. Several meetings have been held between representatives of the pulp and paper industry and the railway interests in regard to the matter, with the result that the date on which the change is due to become effective has been postponed until Feb. 2nd.

During the week two announcements were made that should have bearing on the paper situation. One of them is that the Kipawa Company's mills have been completed and are operating, and the shipment of pulp will be begun during the present week. As may be recalled, the Kipawa Company is a subsidiary of the Riordan's, and its mills were constructed during the past year for the purpose of manufacturing bleached sulphite pulp. About 95 per cent of the product of the mills will be sold in the United States, a fact which, with New York funds at anything like their present premium, will result greatly both to the advantage of Kipawa and the Riordan Pulp and Paper Company. The other announcement comes from the North country where the M. J. O'Brien Company interests continue to evince considerable interest in connection with the installation of a large pulp and paper mill near the north end of Lake Temiskaming. The M. J. O'Brien Company, a \$20,000,000 corporation, controlling, among other things, two important silver-producing mines, namely the O'Brien at Cobalt and the Miller Lake-O'Brien at Gowganda, also controls a part of the Des Quinze power which will develop upwards of 100,000 h.p. It is now stated that the corporation is investigating the various methods employed in other plants and is considering the possibility of electrically-heated boilers, etc.; this, presumably due to the fact that power may be generated at a comparatively low cost owing to the size of the flow to be dealt with.

In the meantime Canadian stocks have behaved fairly well under the exchange situation. Some of them have even made an advance, and Spanish River Pulp and Paper, Laurentide and Abitibi securities have reached the highest point they have ever touched. It is stated that contracts now being entered into for 1920 between Canadian producers of newsprint paper and consumers of that product in the United States are being made on the basis of \$4.50 per 100 lbs., or at the rate of \$90.00 a ton for yearly requirements. One prominent financier in Toronto made this statement: "The Canadian manufacturers have been able to further enhance the splendid industrial prosperity enjoyed during the current year is a development of our standing interest to holders of pulp and paper stocks, which for months past have, as a group, been the most active and spectacular issues on the Canadian market."

The rag and paper stock market is in a rather unsettled condition, some lines undergoing an increase

and others dropping off a bit. Those handling the commodity in Toronto say that some mills are paying the top notch price for some grades while other mills are not buying at all. In a general way, however, there has been a marked stiffening of prices, while the week saw tag manilla jump half a cent a pound, cover papers, owing largely to the cost of raw material, underwent an advance of from one half to one cent per pound.

As this correspondence was about to be despatched came word from Ottawa that the price of newsprint in Canada is to be raised to \$89.00 per ton, f.o.b. mill, on Jan. 1, 1920. The price now being paid by the Canadian newspapers is \$69.00 per ton. For the remainder of 1919 the price will remain at \$69.00 per ton.

#### Rag and Paper Stock Prices.

No. 1 white envelope cuttings . . . . .	\$5.00
No. 1 soft white shavings . . . . .	\$4.50
White Blanks . . . . .	\$2.25
Heavy Ledger Stock . . . . .	\$3.00
No. 1 magazine . . . . .	\$2.40
No. 1 book stock . . . . .	\$1.90
No. 1 manila . . . . .	\$2.70
No. 1 print manila . . . . .	\$1.55
Folded news . . . . .	\$1.00
Over-issue news . . . . .	\$1.25
Kraft . . . . .	\$3.50
No. 1 clean mixed papers . . . . .	80c
No. 1 shirt cuttings . . . . .	15½c
No. 1 unbleached cotton cuttings . . . . .	13c
No. 1 fancy shirt cuttings . . . . .	11c
No. 1 blue overall cuttings . . . . .	10½c
Bleached shoe clip . . . . .	11½c
White cotton hosiery cuttings . . . . .	14c
Light colored hosiery cuttings . . . . .	10c
New light flannelette cuttings . . . . .	10½c
No. 2 white shirt cuttings . . . . .	10½c
City thirds and blues (repacked) . . . . .	4¾c
Flock and satinettes . . . . .	\$3.25
Tailor rags . . . . .	\$3.00
Gunny bagging . . . . .	2¾c to 4c
Manila rope . . . . .	6¼c

#### NEW YORK MARKETS

New York, Dec. 20.—The approach of the Christmas and New Year holidays has little influence of a deterrent character on the paper market. Business in all lines of paper continues active, and the chief detriment to a further increase in trading is the shortage of available paper for distribution purposes. Mills in various parts of the country continue to keep out of the market as sellers, excepting as regards occasional lots of their product that they find themselves possessed of over and above their contract requirements, and jobbers and consumers are finding it a more and more difficult matter to locate available supplies.

Prices on all descriptions of paper are firm, and the tendency in most cases is still upward. Buyers are overlooking questions of cost in their anxiety to cover their wants and are readily meeting the quotations named whenever they are given an opportunity to secure stock. The newsprint situation is just as strong as ever. Publishers are rigidly living up to their agreement to curtail their consumption, but this affects the current demand but little, if any, because practically every newspaper proprietor in the States is endeavoring to buy as far ahead as possible. There seems no doubting that the shortage of newsprint is likely to be

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more seriously felt in the future than it has already been. When those publishers who hitherto have been protected by contract supplies find themselves going short, demand will in all probability assume even broader proportions. Manufacturers are acting cautiously and are booking orders for future delivery only for specified periods and generally only from regular customers. Spot lots of news are readily fetching 8 cents per pound in the open market, and sales have been recorded at higher levels.

Fine papers are enjoying a period of record-breaking activity, and the price tone is exceedingly strong. With raw material costs on the rise, mills producing bond, linen and ledger papers are finding it imperative to advance prices on their product, with the result that quotations are changing rapidly and invariably in an upward direction. Export demand for writing papers shows no abatement; rather, it is on the increase, and manufacturers could unquestionably accomplish a great deal more business in foreign fields were they not seeing to it that domestic customers are first supplied, which leaves them only a limited tonnage for shipment out of the country.

Wrapping and other coarse papers are firm and in steady demand. The pre-holiday activity in this class of paper has probably exceeded that of any other time in the history of the industry, and indications point to a continuance of big business far into the coming year. Tissues are moving in a consistent manner and at strong quotations. Book papers are in equally as firm a position as heretofore. Mills with very few exceptions are sold so far ahead that they are disinclined to accept further orders, and they are operating at capacity production in an effort to make as heavy deliveries as they can. Some discussion has been heard regarding the possibility of daily newspaper publishers using book paper in place of newsprint should the supply of the latter become lighter. This appears to be out of all question, however, mainly for the fact that should even a small number of newspapers switch to book paper the consumption of this class of paper would be increased to such an extent that mills would simply be unable to cope with the situation and prices doubtless would rise out of reach not only of newspaper publishers but customary consumers of book papers as well.

The board market is firm and active. Buying has not been quite as voluminous within the past several weeks, but those in search of supplies have experienced trouble in placing orders, which has promoted a stronger undertone to values. A good many board mills have been in a bad way for want of coal and have refused to enter into engagements while running on part-time schedule.

**GROUND WOOD**—Mechanical pulp is in a very strong market position. Demand shows no abatement and supplies are being moved into consuming channels as quickly as they become available. The market is unusually bare of surplus pulp, mills having disposed of their output for some time ahead and having sold the greater part of their stored supply, so that buyers find it no easy matter to place orders. Prices are on about the same level, though they are nominal to a degree. Most local dealers and mill agents, when asked to quote, advise that they have no pulp to offer for delivery several months hence, and therefore can merely say what they believe ground wood to be worth. Quotations range from \$50 a ton at grinding mills upward,

with stored pulp of far from No. 1 quality commanding as high as \$45.

**CHEMICAL PULP**—Chemical wood pulp is sought in comparatively large volume although aggregate demand does not approximate that of a few weeks ago. Consumers are buying in a more cautious manner, evidently exerting every effort to keep from running the market up against themselves, yet few offers of pulp are going unabsorbed and dealers and importers report being occasioned no difficulty in disposing of all the supply coming their way. There is a well defined belief among sellers that paper manufacturers in a good many cases have failed to cover forward requirements next year as far ahead as they ordinarily have at this season, and expectation consequently is rife that demand will broaden to a marked extent soon after the turn of the year. Domestic bleached sulphite of standard No. 1 quality is quotable at 5.75 to 6 cents a pound at producing mills, and leading manufacturers of this grade of pulp are said to be having no trouble in obtaining the higher figure for their sulphite. Easy bleaching sulphites are in active demand and held at strong prices, domestic easy bleaching being quoted at 4.50 to 4.75 cents a pound and foreign at 5.75 to 6 cents.

**RAGS**—Although demand for papermaking rags has eased off to a slight extent, presumably because of the year-end approach and inventory-taking by paper mills, the tone of the market is fully as strong, and prices on some grades of rags have advanced to new high levels this week. White rags are particularly strong. Dealers and packers openly complain of the light supplies of this class of material coming forward from collecting sources and say that they are finding it next to impossible to cover the wants of all their customers. Sales of No. 1 repacked whites, have been recorded at 9.50 to 10 cents a pound delivered mills, while miscellaneous packing is freely fetching 9 cents delivered. Roofing rags have strengthened a bit in the Eastern market. Sales of No. 1 roofing have been reported at 3.25 cents a pound and more, f.o.b. New York, while No. 2 packing has fetched 3 cents. New cuttings are very firmly held at high prices with the movement toward mills of sufficient volume to give the trade an active complexion.

**PAPER STOCK**—Demand for old paper this week has been somewhat spotty. Certain grades have been freely sought by consumers, while others have been noticeably neglected, with the result that there has been a more or less irregularity to prices. Shavings have moved in good volume and prices are firmly maintained at around 5.75 cents f.o.b. New York for No. 1 hard whites and 4.50 cents New York for soft white shavings of No. 1 quality. Books also have met with a ready sale at a quotational range of 2.50 to 2.60 cents at shipping points, while flat folded newspapers are in excellent demand at 1.05 to 1.10 cents a pound New York. Mixed paper, on the other hand, has receded in price owing to a falling off of demand, sales having been noted at 80 cents per hundred pounds and less at shipping points. Over-issue newspapers are in urgent call and are commanding remarkably high figures, mills paying more than 1.50 cents f.o.b. shipping points in some instances.

**OLD BAGGING AND ROPE**—The old rope market displays a steady undertone and supplies are moving into consuming channels in consistent fashion at a price range of 6.25 to 6.50 cents per pound New York for No. 1 Manila rope. Old bagging continues to be main-



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ly neglected by buyers and the market is featureless and tending lower. The fact that dealers and packers are holding stocks, however, acts to maintain quotations without change.

#### UNPOPULAR STRIKES FAIL.

The present position of the labor unions is not unlike that of Germany, Austria and Russia before the war. Each of these countries was possessed of a conscript army, trained with the leading motive of quick mobilization and instant action. The rulers of these countries were poor keepers of the peace. One was an old man in his dotage, the other was weak and ill-advised, and whether the third was a knave or a fool, the world has not decided, and yet each of them possessed a deadly weapon ready for instant use. The inevitable happened.

The leaders of labor have learned the power of the strike, but they have not learned the responsibility of power or the penalty of its use. They are being taught today. The fiasco of the London and Liverpool police strike, the equally flat failure of the Boston police strike, the repudiation of the O.B.U. in Canada, the failure of the steel strike in the States, and the resentful temper shown by the British public towards the striking railwaymen, all point to the fact that thinking men are realizing that the health and lives, the earnings and occupation of men should not be jeopardized by a never-ending succession of strikes. The executive of the railwaymen in Britain called a strike without taking a vote. This procedure does not differ in principle from the action of a general staff in adopting war measures without consulting a parliament. The principle is inherently wrong. It is one of the principles the war was fought to break and discredit.

It may be that so-called 'labor' has had its fling, for unfortunately there is only one way to prove that certain theories are wrong, and that is to try them out. Some very far-sighted and statesmanlike utterances have been made by labor leaders recently, and it would appear as if many men in the ranks of the unions were becoming afraid of some tendencies that have shown up more clearly within the past few months. One thing however is quite clear, namely, that if labor unions want to exert their political power they must do so through the legitimate channels of the vote, and must not use their power over the lives

and personal comforts of the populace to enforce preferential treatment of selected trades which are powerful because they control some necessity of civilized life.—Iron and Steel of Canada.

#### A LUBRICATED PLUG VALVE.

The pulp and paper industry in Canada will be interested in the new plug valve known as the Nordstrom Lubricated Plug Valve, which the Merrill Company of San Francisco, Cal., are placing on the Canadian market, and which is particularly adaptable to pulp and paper mill conditions. Already several mills in Canada are equipped with the valves and they are giving splendid satisfaction. The basic principle of the Nordstrom valve is the combination in a plug valve of lubricants, conduits and lubricant chamber at the base of the plug so positioned that when pressure is applied to the lubricant screw the pressure operates to lift the plug from its seat and to distribute the lubricant over the bearing surfaces.

This type valve can't stick and it will not leak. For the reason that the bearing surfaces are at all times protected by a film of lubricant an all iron valve will in most instances have an unusually long life, even when handling acid or caustic fluids which would quickly destroy the usual gate valve or plug cock.

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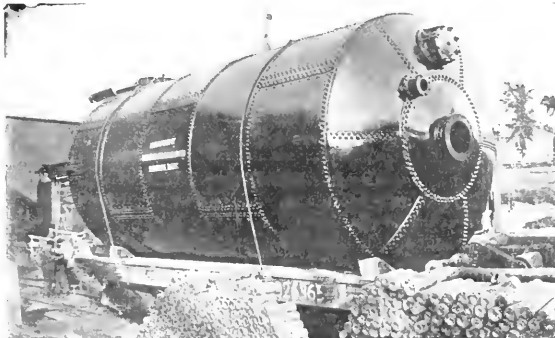
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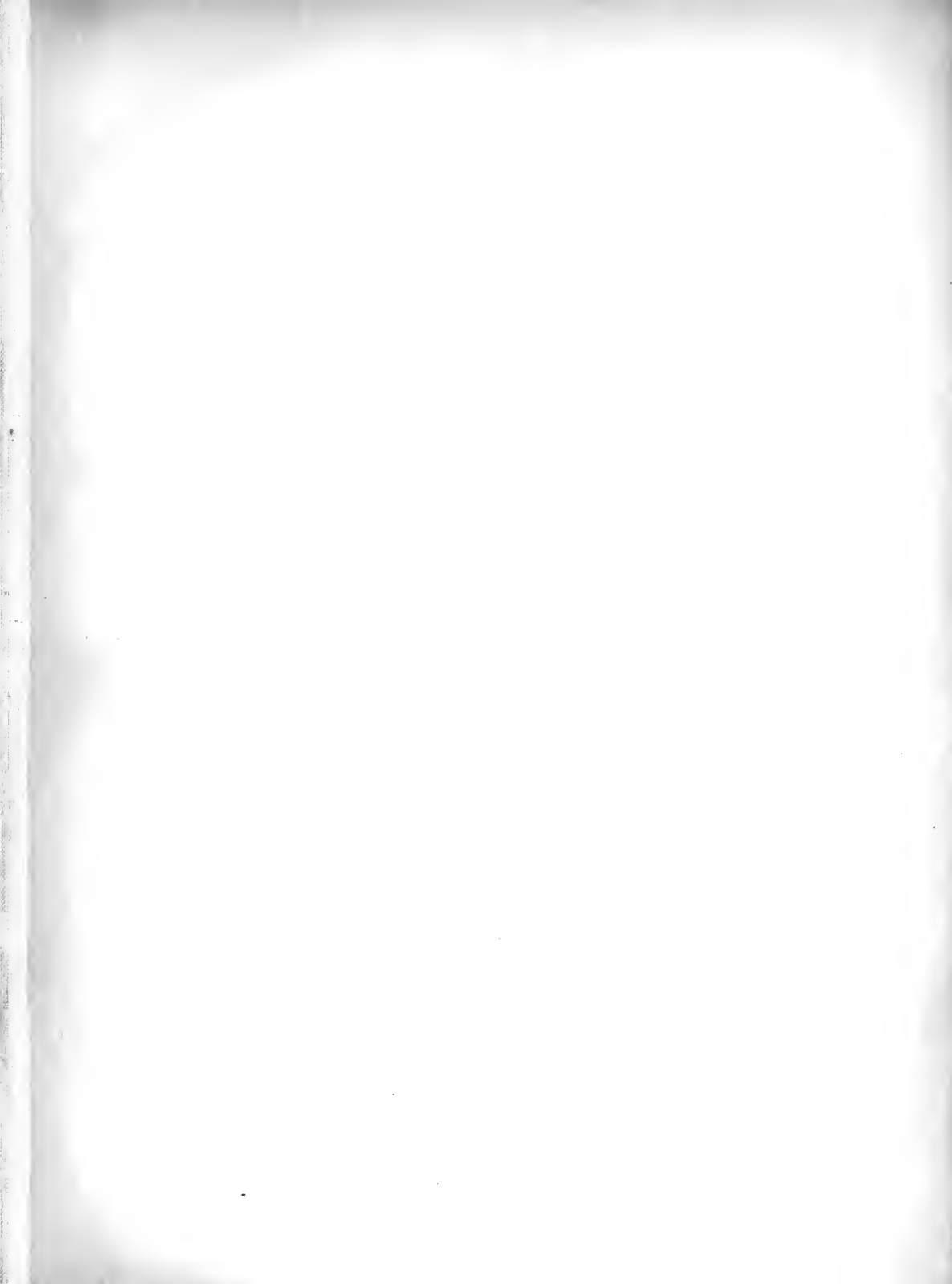
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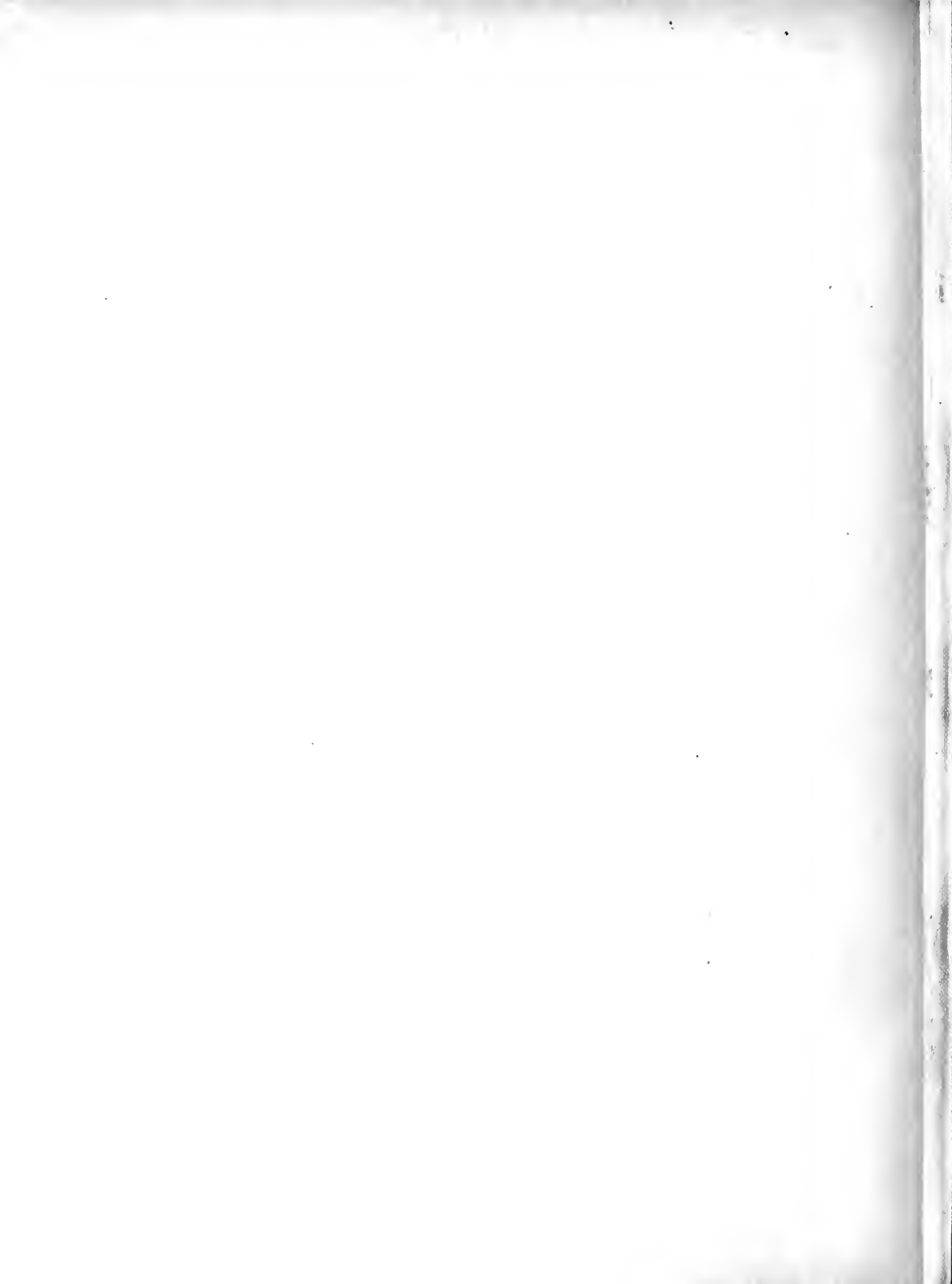
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